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AUGUST 1, 1906.

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THE CONTINUAL NEED FOR RUBBER.

A FACT deserving of more attention than in a mere "trade note" is that rubber was chosen for the flooring material of a building recently erected in Boston by a religious society—one of the most costly churches in the country, and one in planning which the effort was made to render every feature as attractive as possible. The interior decoration received special attention, involving the study of color effects by artists of note, and yet the flooring material chosen was made to afford pleasing effects, in harmony with the general scheme.

Most people are accustomed to seeing rubber flooring used in exposed conditions, as on steamer decks, or in public places, involving excessive wear, as in courtrooms, but such material usually has been chosen rather for utility than for decorative effect. "But if rubber flooring is suited for a magnificent church, why not for libraries, schools, and even dwellings—not only for floors, but in many places for wall tiling?"

Its general merit has been proved, except that some people have not considered it attractive enough, and some probably have objected to it as being unconventional. Anything, however, that is really desirable is capable of becoming "conventional," and doubtless the chief deterrent now to the use of rubber tiling is the cost. As its advantages become better known, however, the cost will seem less objectionable. Besides, the cost of raw rubber must decrease in time, opening the way to its constantly widening use.

So long as everybody cannot confine his walking to rubber floors, ease in walking may be promoted by wearing rubber heels when one treads hard surfaces. It is asserted that the king of England wears such heels on his boots, and we have no reason to doubt it. His influence has always been marked in matters of dress, but the Britishers have not waited for their monarch to set the fashion of wearing rubber heels. So general is the custom that large factories there are devoted to making rubber heels alone, turning them out by the million. Nor is this solely an English custom; rubber heels are worn wherever Britishers roam, and are made in Canada and Australia, while their production is also very large in America.

If we had time to go over the whole field of trade, the facts which could be gleaned in regard to the uses of rubber in small specialties—small in comparison with automobile tires, at least—would more than fill all our space. Carpet sweepers having rubber parts are sold by millions; clothes wringers with rubber rolls are used wherever civilization exists; rubber stamps are found in business houses all around the world. And this only begins the list. We have referred to the whole subject, to lead up to the conclusion that the world will continue to use more and more rubber, so that overproduction of this commodity—to the extent of making the production unprofitable—is not to be thought of in our era.

RUBBER GATHERING SCHOOLS.

THE importance of French Africa as a rubber producing region has been referred to many times in these pages. Not only is there a large area, rich in rubber of a desirable quality, but the progressive policy of the administration promises to make the most of this natural wealth, instead of allowing the rubber finally to disappear, as has happened in many other parts of the world. The French apparently have strengthened their authority continually in their West African possessions, gaining and holding the confidence of the native chiefs, to the extent that governmental regulations are neither a dead letter nor enforceable only by means of armed troops. All of which, of course, was an essential preliminary to any effective regulation of rubber gathering.

The authorities in the region referred to have striven to prevent the adulteration of rubber, with the result that the yield from some localities, after having fallen in price in the markets, is again taking high rank and bringing better prices. Likewise, every effort has been made to protect the rubber plants from destruction, though how much can be done in this respect remains to be proved. But the authorities have gone further. The culture of rubber is encouraged in various ways, with a view to the natives benefiting thereby, and actual planting has been done in a number of places.

Not least in importance of the steps taken by the administration is the establishment of schools for the instruction of the natives in rubber planting and in the collection of rubber, whether from native or cultivated trees. This work has been in charge of the very efficient inspector of agriculture for French West Africa, M. Yves Henry, who lately has visited Europe with a view to learning better how to prepare rubber to fit it for the requirements of the consumer. He has made a study, too, of the best species for planting under different conditions.

We do not suppose, of course, that the world's production of rubber is going to be modified largely in the near future by these rubber planting schools, but the capacity of the natives to learn better planting methods appears established, and the one thing remaining is to tempt them to habits of industry by teaching them new wants which can be met only by working. The idea of such schools is creditable to its author and deserves adoption in other regions.

OKLAHOMA, THE FORTY-SIXTH STAR in the American galaxy, makes her advent as a State with a larger actual population than could be claimed by any of her sisters on first attaining statehood. In fact, twenty older states contain fewer people to-day. Not that the number of its citizens counts most in the rank of a state, but the more good citizens the better, and the Oklahomans will suffer by comparison with none in independence, energy and the other qualities which from the birth of the nation have made for its material and moral progress. The West has never been lacking in the production of strong men, the newest

state taking rank in this respect with the older, so that Oklahoma may be regarded not as a fledgling, but as a full grown member of a family the strength of which is shared by all its members. Leaving all other considerations aside, the settlement of the new state broadens the field for American industry and trade, her people having started, so to speak, beyond the condition of being merely self supporting, and able to buy on the liberal American scale. It is the continual development of such new states during the past century—a work surpassing the colonial expansion of any European power—that has made this country so little interested, comparatively, in the development of trade abroad.

THE WORLD'S PRODUCTION OF RUBBER during the year ended June 30 was, by all accounts, the largest for any year in the history of the trade. The fact that prices have been maintained at so high a figure indicates, first, a heavy rate of consumption, and, secondly, uncertainty as to the size of next year's supplies. Nothing in commerce is more uncertain than how much rubber will be available in any year, and as a heavy demand can always be counted, an increase of a few hundred tons in the world's visible supply does not put holders of crude rubber in a panic to sell.

WHAT APPEARS WORTH A NOTE IN PASSING is that a leading financial journal in Boston, where public attention was recently attracted for a month to a trial which led to the conviction of a rubber plantation company promoter for dishonest practices, comes out with an article in defense of rubber planting. "The real difficulty," says this journal, "was not as to the growing of rubber in Mexico, but it is in the mismanagement and fraud as practiced by Owen and Borges."

A READABLE STORY RELATING TO MEXICO and entitled "A Home on a Rubber Plantation" appears in the fiction department of one of our contemporaries. It has just occurred to us that very many articles published on rubber in Mexico do not have to be placed in any particular department for them to be recognized as fiction.

PROSPERITY HAS BECOME THE RULE IN GERMANY again, apparently on a more general scale than before the trade depression of a few years ago. The rubber industry appears to have had its full share in the improved conditions, judging from the increased consumption of raw materials, the extension of factory capacity, and the larger dividends declared by the leading companies.

THE NEW BRAZILIAN TARIFF LAW makes a concession of 20 per cent. in the duty on ice boxes imported from the United States. Ice boxes would make very good packing cases for the shipment of fine rubber, and the reduced rate probably is intended as a measure for the encouragement of the rubber interest. The reduction is also applied to flour, which some people have been unkind enough to suggest makes an excellent "filler" for crude rubber.

IT WOULD SEEM, from a study of the patent office issues, that every suggestion possible to be made for rendering tires puncture proof has been exploited, except the treatment of compressed air to prevent it from escaping when a puncture occurs.



NEW ENGLAND RUBBER CLUB ON STEPS AT POINT SHIRLEY CLUB.

NEW ENGLAND RUBBER CLUB OUTING.

A SINGULAR feature about the midsummer outings of the New England Rubber Club is that the last is always the best. This is hardly a fair statement of the outing that took place on Wednesday, July 18, for that turned out to be a bit better than the best. It was a departure in every way from those heretofore held and so arranged that the interest was kept up from start to finish.

To begin with, the Club were really guests of the United States government—that is, for a time, and a little later the representatives of the government were guests of the Club. It happened this way: Commanding Officer, Captain Charles E. Kilbourne, U. S. A., of Fort Andrews, Boston harbor, placed the island known as Peddocks at the disposal of the Club for the afternoon. At the same time Captain Ira L. Fredendell, the Depot Quartermaster at Boston, got permission from Washington and placed the fine new government transport tug at the disposal of the Club for the water journey. At 1.30, therefore, the Club, its officers, and the representatives of the United States army met at Commercial wharf and with the Lynn Cadet Band playing, and flags flying, the exceedingly jolly party, numbering 160, started down the harbor. Landing at Peddocks they formed four deep and marched to the ball ground. Here Captain Kilbourne had erected a commissary tent where the thirsty could refresh themselves and had also placed seats on the sloping hillside which formed a fine grand stand from which to view the game.

The baseball game was between the Manufacturers and the Importers and was hotly contested. Indeed, some of the playing approached closely to the professional order, it was so good. Then, too, some of the plays were exceedingly good because they were so funny. Captain Kilbourne acted as umpire and came safely through the ordeal with no abrasions and loss of no prestige. The score was 4 to 1 in favor of the Importers. The runs were made by F. C. Hood, who captured the only one made by the Manufacturers, while for the Importers and Brokers, Chipman made two runs, Farrington one, and Kelley one. The following list is that of the players and their positions:

MANUFACTURERS.

Webster, p.
Stevens, l. f.
Hood, 2b
Allen, s. s.
Hurley, 3b.
Pierson, 1b
Palmer, r. f.
Knowlton, c. f.
Tyer, c.

IMPORTERS AND BROKERS.

Chipman 2b.
Currier s. s.
Farrington, c.
Kelley, 3b.
Stedman, c. f.
Wadbrook, 1b.
Kiley, p.
Ashley, l. f.
McAloon, r. f.

The next move on the program was the water journey to Point Shirley Club, for dinner. As the government transport was in use at just that hour, two tugs were ready, upon which the members of the Club and their guests embarked, and in which they enjoyed an hour's sail around the beautiful islands in the harbor. At 6 o'clock they drew up at the pier at the fine new Point Shirley Club house and after

being photographed were ushered in to dinner. The photographing, by the way, was done by Chickering, who sends his best man and then supplies the pictures to those of the Club members who desire them at so much per. He was able to secure a very cheerful crowd this time, because just as the camera clicked, Mr. Galloway remarked in an audible aside: "Make a noise like a dollar."

The dinner was one of the famous fish dinners that have been for years supplied at this very spot, formerly "Taft's" and was in every way satisfactory. With the band on the veranda and the good singers of the Club at their best, music was a special feature during and between the courses. Two impromptus, however, were noteworthy. One where R. J. Owens, who has a fine bass voice, sang the Stein song, the Club joining in the chorus, and another when E. E. Wadbrook, in a rich baritone, sang a popular song in the chorus of which the Club also joined heartily. Both of these songs were called for by President Paul, and following them came an impromptu on the part of Mr. Solbery, who in a clear tenor sang two popular songs much to the delight of the feasters.

After coffee, President Paul said some nice things about the former presidents, told a good story, and asked the Editor of THE INDIA RUBBER WORLD to respond to the toast "Our Guests." This he did with enthusiasm and the assistance of various members of the Club, who interjected so many jolly suggestions that one would almost have thought that it was a session of the famous Gridiron Club.

Captain Kilbourne was then called upon to speak for "The Army," and made a rattling good speech—perhaps

the best offhand effort that the Club has ever listened to. Without going into details the trend of the thought was that the civilians should get nearer to the army officer and the army officer know the civilian much better. His speech was eloquent and witty and received with the utmost enthusiasm. Indeed the result of it upon the members of the Club was a higher respect for our army and the very pronounced popularity of the speaker and his brother officers. The other officers in attendance, (the captains of all the forts in the harbor were invited), were Captain J. E. Weyke, Lieutenant Winslow, and Dr. Peck the "medico" at Fort Andrews.

Following the Captain's speech was that of George E. Puchta, of the Queen City Supply Co. (Cincinnati), which was an aggregation of good stories exceedingly well told. Mr. E. E. Wadbrook also told a good military story, or rather naval story, which was well received.

On the return trip to Boston, Professor Robert W. Wood, of the Johns Hopkins University, a brilliant young physicist, convulsed the crowd in the main cabin by a series of stories in dialect.

* * *

THE workers at the Club dinner this year were Francis H. Appleton who secured the regular Army and through his friendship with the officers got for the Club many unusual favors, George H. Mayo, the chairman of the entertainment committee, Robert L. Rice, the assistant secretary and the usual helpful ones Messrs. Whitmore, Wadbrook, and Jones.

There were a number of western men present at the Outing, notable among them being George S. Andrus, La Crosse, Wis., and George L. Puchta, Cincinnati.



NEW ENGLAND RUBBER CLUB AT PEDDOCK'S ISLAND, AFTER THE BALL GAME.

THE INDIA-RUBBER TRADE IN GREAT BRITAIN.

By Our Regular Correspondent.

SAMPLES of commercial rubber have been chemically examined by D. Spence, whose results appear in the last *Quarterly Journal* of the Institute of Commercial Research in the Tropics. Without wishing in any way to question the accuracy of any of the figures, even if I might

RESINS IN
RAW RUBBER.

doubt their utility, it must be said that some of them are rather surprising. From the figures alone it would appear that Rangoon rubber, from Burma, is a much better article than Pará from South America, the percentage of rubber being 84.63 in the former case and only 71.09 in the latter. The resin in the former is higher, 6.81 per cent. against 2.73, but the residue, which I suppose means fiber and dirt, is put at 8.16 for the Rangoon and 11.71 per cent. for the Pará. Leaving the other samples out of consideration, the sample of hard cure Pará from South America, which gave 71.09 per cent. of rubber, 14.30 per cent. water, 2.73 per cent. resin, and 11.71 per cent. residue, hardly seems a fair sample. Authorities in this and other countries are fairly well agreed in putting the loss of Fine rubber on washing at from 18 to 20 per cent., the bulk of which is water, and 11.71 per cent. residue must surely be exceptional. The Pará rubber from the Gold Coast is given as being practically dry and having 2.31 per cent. resins and 3.30 residue, a very much superior article if one is to judge by the comparative figures alone. In looking at the table of resins it must be carefully borne in mind that the figures must not be compared with those published by Terry, Weber, Clouth, and others, because these latter all refer to washed and dried rubber. As a guide to the manufacturer the percentages of resins in the dried rubber are much better than any figures relating to products whose respective amounts of water and dirt must be allowed for before a comparison of the amounts of resin can be made. Of course the Liverpool figures may not be meant for the manufacturer's eye, but it is quite possible that they may come before his notice and at a time when pressure of business might interfere with their careful examination.

DITMAR has recently had an article in the *Gummi-Zeitung* on a laboratory method for estimating the durability of rubber goods. The subject is an interesting and important one, but it is clear that it is hedged in with many difficulties. Without going into the chemical details of Ditmar's process, it may be said that it consists in exposing the goods to oxygen gas at a high temperature for a greater or less length of time, the increase of weight being taken as the index of oxidation, it being assumed that the durability varies inversely as the degree of oxidation. Now no doubt laws of this sort may be laid down from a scientific point of view, but one has to be very cautious in accepting them as applying in practice. The use of the term durability is of doubtful value because it depends entirely under what conditions the goods are used or are intended to be used. Taking this into consideration, it does not seem possible to devise a test that shall be generally applicable to rubber goods, though I am quite of opinion that comparative tests of the probable durability of goods of a particular class in reference to an acknowledged standard can be made to give useful results.

This procedure has long been adopted by railway companies and other large buyers of rubber goods, more especially in the case of hose piping and buffers. Such mechanical tests are devised for each class of goods with special reference to the conditions under which they are to be used. No claim has been made, as far as I am aware, that any of them has a universal utility for testing rubber goods. And I think that in the chemical tests which have been proposed in the past and in those which will no doubt be devised in the future they will have to be specially arranged for each class of goods. With regard to the oxidation test proposed by Ditmar, in theory it is on the same lines as was proposed by Weber to estimate the liability of cycle tires to sun cracking, though the method of applying the oxygen is quite different. Weber used a cold solution of hydrogen peroxide in acetone and expressed himself as satisfied that the increase of weight in strips of rubber owing to oxygen absorbed gave a true index of the liability of the rubber to sun cracking. I have not any information as to whether the process has been generally adopted or found reliable by others. In saying what I have I don't wish in any way to discredit Ditmar's process; I merely wish to advocate caution in its general adoption because otherwise in inexperienced hands it might lead to the condemnation of goods perfectly suited to their purpose.

WOOD-MILNE
RUBBER HEELS.

THE continued growth of the rubber heel industry forms I think a sufficient excuse for a further reference to it in these columns. The pioneers of the business were the Revolving Heel Co., whose head office and works are situated at Preston. The article was first put on the market in 1896, but for several years it proved very uphill work, and the business was carried on at a loss for some time. Eventually, however, the utility of the pad became recognized and about 1902 the business began to move with giant strides. The Revolving Heel Co. now make all sorts of rubber heels, revolving, stationary, and tips, and have the enormous turnover of about 20,000,000 heels per annum. The company have always made the quality of the rubber a strong point, so that now the name "Wood-Milne," which may be considered their trade mark, is recognized as the hall mark of quality wherever the goods are in demand. Though the business is British in its origin and development, the goods now seem to be in almost world wide demand, large orders coming from the various British colonies and from such out-of-the-way places as Khartoum and Omdurman. Of course, public opinion as to the advantages to be derived from wearing these adjuncts to a leather boot is not unanimous; such innovations are sure to meet with an opposing current of conservatism. The statement, however, which has often been made in my presence, to the effect that only low class people have adopted rubber heels, does not find confirmation among the shoe makers who only do business with the wealthy class. Without going too much into detail, it may be mentioned that the boot maker to the King is now regularly putting rubber heels on to his ordinary boots, which are supplied at 3 guineas a pair. In this case it is not a highly sulphured pad attached mechanically, but a block of black rubber cut

to the shape of the leather heel and fitting so that it is impossible at sight to distinguish the rubber from the leather. It can hardly be contended that those who pay 3 guineas for a pair of boots are actuated mainly by motives of economy when they ask for rubber heels, so it must be concluded that considerations of comfort have acted largely in bringing the business to its present imposing dimensions.

MY recent remarks on this topic have brought comment from the *India-Rubber Journal* and from Mr. Heyl-Dia. Ex-

MR. HEYL DIA'S
SYNTHETIC RUBBER.

cept in one particular the former agrees with what I said, and indeed goes further in the way of criticism. May I, however, point out to the *Journal* that it is an exceedingly difficult thing to prove a universal negative in cases such as these, and that therefore it is quite possible that I found an interest evinced in one quarter while they found it absent in others. This of course is an academic matter of no importance; it is more to the point that Mr. Heyl-Dia, in his letter to this paper, defends the use of the term "synthetic" with respect to his rubber. Until I have some personal acquaintance with the rubber in question it would be out of place for me to say anything more with regard to it. Mr. Heyl-Dia says he is ready to buy untold tons of Pará rubber at 1 shilling per pound. But I never said anything about such rubber being sold at this price; I merely parsed on the statement made to me by a planter that the cost of production was or would shortly be a shilling. A good many bodies, diamonds for instance, are sold at a price showing far more than a 10 per cent. profit on their production costs. No doubt at the present selling price of Pará rubber a good quality substitute, or synthetic rubber, might be sold at a good profit. The point, however, which I wished to make was that such products might not prove profitable if the price of raw rubber fell 2s. 6d. per pound, at which figure the planters say they could still make a good profit.

FROM figures obtained from one of our largest manufacturers it would seem that there is no falling off in the demand

THE CYCLE
TIRE TRADE.

for cycle tires. Although, of course, the motor tire business shows continued expansion, yet the purchasers belong for the most part to a different class from that with which the bulk of the cycle business is done. The main difference of to-day compared with what was formerly the case, is, it need hardly be mentioned, in the profit department. The reduction in price from £2 to 15 shillings per pair of tires complete reduces the profit earning capacity of the business to about the level of mechanical sheet and it is only in a large turnover that salvation lies.

I UNDERSTAND that Mr. Thomas Rowley has severed his connection with the Recovered Rubber Works, Limited, of Clayton, Manchester, with which he has been so long connected as managing director. His own firm, however, will continue to carry on business at their new works and offices, 13, Green lane, Brook street, Manchester, in the lines with which the name of Rowley has been so long associated in the rubber trade.

THOMAS ROWLEY
& CO., LIMITED.

THE announcements referring to the sale of rubber machinery at the well known proofing works of Messrs.

MESSRS. ABBOTTS.

Abbott, Anderson & Abbott, Dod street, Limehouse, London, has led to somewhat erroneous conclusions in certain quarters as to the state of

the firm's business. The sale was by an order in Chancery arising entirely out of a private family matter connected with the will of the late Mr. Abbott, the senior partner. For some time past part of the manufacturing has been carried on at Harpenden, and the decision came to by the existing partners to conduct the bulk of the business there in future is only on the lines of what several other London firms have done of late in the way of removing their premises to more salubrious and less heavily rated localities. I don't profess any detailed knowledge of Messrs. Abbotts' business, but believe I am not far wrong in saying that the depression in the waterproofing trade of late years has not affected them to any great extent, because they have been associated more with the manufacture of high priced clothing for sportsmen and yachtsmen than with supplying the needs of the million, and the demand for the heavy expensive coats has not fallen off in anything like the proportion seen in cheaper goods.

I HAD an opportunity recently of accompanying an officer on barrack inspection and among the stores and equipment

GROUND
SHEETS.

coming under my notice were a number of ground sheets. The rubber on these was in the last stage of decay and I was not at all surprised at the barrack warden's remark that though the waste rubber dealers were keen enough to get hold of other old rubber goods, they did not care for ground sheets. It was reassuring to be told that such sheets as these, in which most of the rubber had cracked off or was in the condition of putty, were only used for recruits to lie upon during firing practice. From data given me as to age and conditions of service, it was clear that the ground sheets had lasted quite as long as could have been expected. It was stated that sea air had a destructive effect upon them; I don't know how far this statement finds corroboration, but the seaside is generally associated with ozone, which is well known to have an oxidizing influence upon vulcanized rubber. A point which struck me in the course of my observations and enquiries was that very little appears to be known about the properties of rubber goods, either by those who use them or by those in higher positions who are responsible for their use. Official vigilance seems to be directed more keenly on such unimportant points as a uniform distance between the eyelet holes in a sheet than upon such matters as conditions of storage.

NEWFOUNDLAND TARIFF ON RUBBER.

UNDER the new tariff schedule of Newfoundland an import duty of 40 per cent. *ad valorem* is levied upon the items described in the following paragraph:

Indian-rubber boots and shoes, and all manufactures in part or in whole of Indian-rubber or guttapercha; Indian-rubber clothing and clothing made water-proof with Indian-rubber or like substances; rubber or guttapercha hose, and cotton or linen hose, lined with guttapercha or Indian rubber.

Rubber tires for carriages are dutiable at 20 per cent., and machinery belting of whatever material at 10 per cent.

A WRITER in our London contemporary strongly urges the British rubber trade to go in more for the golf ball manufacture. He figures out a yearly demand for 6,000,000 balls from British golfers, and he mentions several manufacturers who have made handsome profits from this trade—one of over £25,000 [=about \$125,000] last year.

HAWAII AND RUBBER CULTURE.

By the Editor of "The India Rubber World."

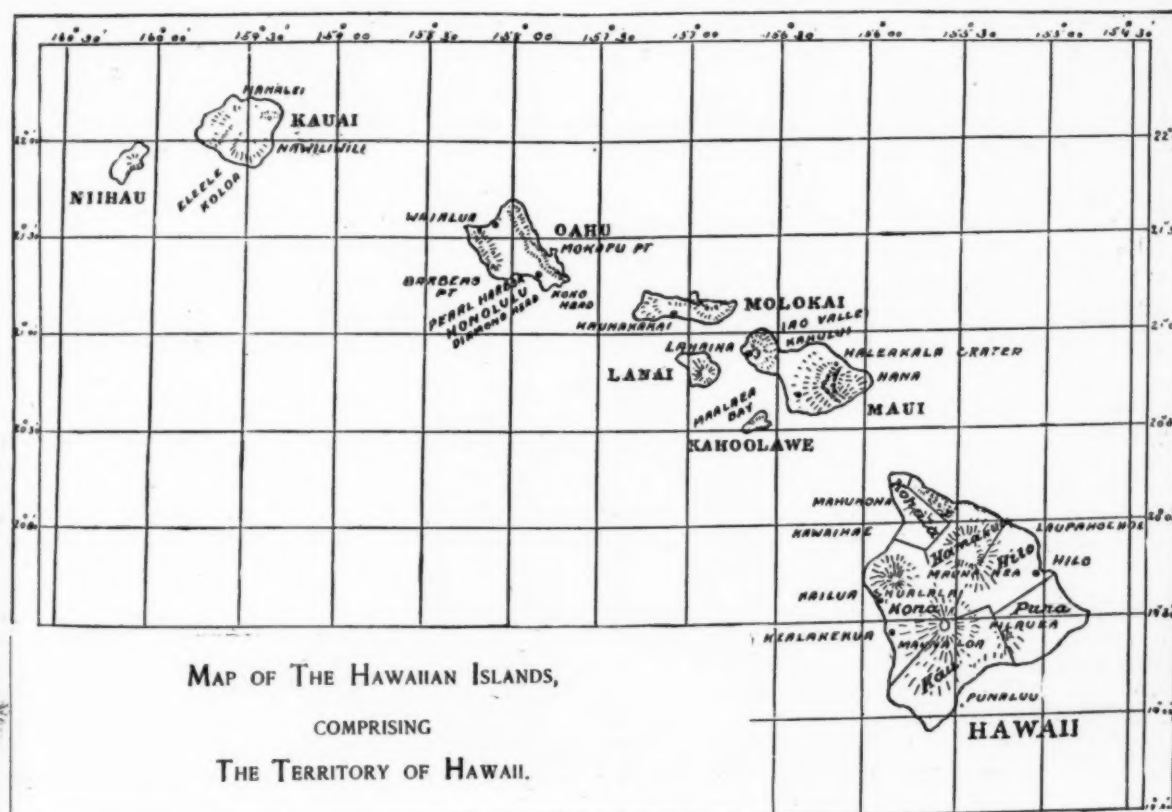
WE crossed the Pacific from Yokohama to Honolulu in the *China*, and as passengers were few I had a roomy, high-studded cabin to myself. Against the advice of the steward I kept the port open, preferring to take a chance on drowning to one on asphyxiation. Much water came in, but it didn't touch me as I slept in the upper bunk, reached by a ladder, and my chance proved well taken. When we crossed meridian 180 we had the somewhat unusual experience of having a day 48 hours long. We were given two sunrises, two sunsets, and six square meals, all on Friday, and all on the fifth of the month. Had it been Thursday or Saturday I should not have cared, but I hate fish, and that was certainly a long day.

Our first sight of the Hawaiian group came at evening from the "heat lightning" playing over one of the outlying islands, and at daybreak the next morning we were at Honolulu (pronounced Honolulu by the inhabitants). I say at the place, but not in it, for one of our steerage crowd of Koreans, after troubling the ship's doctor by developing granulated eyelids, and threatening smallpox, came down with a huge abscess in the arm pit that the quarantine officials diagnosed as bubonic. So we waited while they took a section of him ashore, only to return after hours with the glad news that it was simply a respectable but angry boil.

After this comforting assurance we went ashore and had tiffin at the elegant Alexander Young Hotel, went out to Wakaki Beach for surf riding, bought curios, took trolley and carriage rides, and in fact settled down to real hard work as sightseers. I am, however, going to put off the story of my own adventures and get right down to the story of Hawaii as it is and as it will be when it gets to be a rubber producer.

To go back a little, the Sandwich islands were discovered in 1778 by Captain Cook, whom the natives believed to be edible, and whom they at one proceeded to get away with. Some time in the present century they were re-discovered by William J. Gorham of the Gorham Rubber Co., of San Francisco. The natives did not cherish the illusions regarding him that they did toward the former discoverer and he got away with *them*. When I met him in Honolulu he had just subjugated every trader in the group, and was planning to sell to a syndicate, enough of his wonderful steam hose to run a pipe line from the volcano of Kilauea to Honolulu, to furnish steam for industrial purposes.

The islands comprising the territory of Hawaii are seven large ones and quite a number of little ones. They are Hawaii, Maui, Oahu, Kauai, Molokai, Lanai, and Niihau. According to the census of 1900 they had 154,001 inhabitants. Of these islands, the most densely populated is that





* PALMS AND RICE FIELD.



TYPICAL HAWAIIAN VIEWS.

[Davey Photographic Co., Limited, Honolulu, H. I.]



THE EWA MILL AND CANE FIELD.

of Oahu, which has nearly 60,000, and it is on this island that the city of Honolulu is situated. The native population to-day is small, being less than one-third of the total, the predominant races being the Chinese and the Japanese. Probably no country in the world offers a greater variety of beautiful scenery than does this midocean territory of ours, and not only is the scenery marvelous and the arable land rich and productive, but the climate is uniformly the finest on earth. The very hottest day that the islands can furnish will not show a temperature of over 90° F. and it never gets colder than 55°. On the mountain tops they have cool nights, occasional frosts, and sometimes a little snow, but anywhere near the sea level there is beautiful May weather the year round. It is certainly a fisherman's, huntsman's, bicyclist's, automobilist's, or general tourist's paradise, and the American people are rapidly waking up to the fact.

Sugar cane, of course, is the main crop in the Hawaiian islands. I have forgotten exactly the number of acres but think it is about 200,000, most of which are tilled by great corporations under their own plantation systems. There are, however, many small planters whose cane finds a ready market at the sugar mills. A great variety of tropical fruits such as pineapples, bananas, alligator pears, oranges, etc., are also grown and a good deal of coffee is raised while the Chinese planter is quite a feature as a rice producer.

It is claimed that there are at the present time something like 400,000 acres of arable land on the islands, most of it belonging to the government. This may be easily acquired by those who contemplate any sort of planting proposition. Much of this land lies in sheltered valleys, and at the present time it is heavily wooded. The soil being volcanic, except on the coast plains which are of coral origin, the drainage is good and the land fertile. For certain growths, however, fertilizers are needed, and to those who contemplate taking up land in the territory of Hawaii it is strongly urged that they communicate with the special agent in charge of the Hawaiian Experiment Station at Honolulu, who is a gentleman of much experience and who is in a position to be very helpful. Exactly what it would cost one to purchase land it is difficult to state. Good sugar land brings from \$25 to \$60 an acre, that is, when purchased from private individuals, but bought from the government it would cost from \$10 to \$15. These holdings are all classified, and the commissioner at Honolulu can give any inquirer full information regarding what is open, conditions for the homestead lease system, right of purchase, leases, cash freeholds, and so on.

I have dwelt at some length upon this for the reason that now that rubber culture has made a beginning in the Sandwich islands, and particularly as these islands are now making real progress, many faces

will turn towards this Pacific possession of ours, and much agricultural development will result. It is to be hoped that a large part of this, or at least a fair proportion of it, will be along the line of rubber cultivation. Indeed, it wouldn't hurt the writer's feelings a bit if the thousands of acres devoted to the luxury, sugar, were turned within the next five years into the production of the necessity—rubber.

To speak a little further about conditions for the man who wishes to plant rubber or anything else: It will be a satisfaction to many to know that there are no snakes or poisonous reptiles of any kind in all the islands. There are no such pestilences as are to be found in other tropical countries, and there isn't a wild beast anywhere there; nor have they yet discovered malaria. Of course there are certain drawbacks. While there are apparently no insects poisonous to man, there are many agricultural pests. For example, the fruit industry suffers from scale and mealy bugs and sugar planters are obliged to fight the borer and all his kin. Then, too, there are cut worms, plant lice, Japanese rose beetles, and lots of others of the same sort. Whether there is anything that will be injurious to rubber no one knows yet,



"MANIHOT GLAZIOVII," NAHIKU PLANTATION. (22 INCH DIAM.)



"MANIHOT GLAZIOVII" TREES 7 TO 10 MONTHS.



SEVEN YEAR "MANIHOT" NEAR NAHIKU LANDING.



VIEWING YOUNG RUBBER.

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but it is quite likely that some of the existing insects will adapt themselves to the rubber situation as it develops.

My interest in rubber in Hawaii dates back to 1890, during the reign of King Kalakua, with whom I had a most interesting correspondence. That is, I wrote him some very interesting letters and got no replies. I don't say specifically that that is why he lost his throne, but any student of history knows what has happened to the islands since I received the royal snub.

The defunct ruler, however, went on record as believing that something might be done with the *Ficus religiosa* and the *Ficus Indica* which grow there in "prolific profusion." He also noted that the bread fruit tree (*Artocarpus incisa*) produced a gum that for centuries had been used by his subjects for waterproofing purposes, and which he believed might contain a percentage of rubber. With regard to the cultivation of rubber, he promised his royal sanction to anybody with money to spend to come there and spend it for rubber or anything else.

Somewhere in 1900 the papers in the Far East claimed that the United States government was going at once to save \$30,000,000 that it was then paying for imported rubber, by booming cultivation in Hawaii. The story was, that the nucleus was to be 100,000 rubber trees transplanted from Brazil to the newly acquired territory. Nothing, however, came of this.

It was on the island of Maui that the first real start at rubber planting was made. Seven hundred and sixty square miles has Maui, and a most romantic island it is. It is really two mountains connected by a sandy isthmus, and is wonderfully varied both in climate and scenery. For example, speaking of climate, one side of the island is dry and barren, but the other, the windward, is exceedingly fertile. This portion, which consists on the lower levels of picturesque valleys, has plenty of rain and rich soil, and it is here that the rubber is being planted, and Ceará (*Manihot*) was the first tree selected. Rumor has it also that there was something like 200 acres, part *Hevea* and part *Ficus*, planted about the same time, but no record of this planting is at present available. In 1905, however, there was formed the Nahiku Rubber Co., Limited, which took over the plantation containing the Ceará trees planted some years before, which although few in number, had not only matured remarkably, but had become excellent rubber producers. This was rather remarkable, that is, the fact that the trees produced latex, as the rainfall was nearly 250 inches, and with the experience of the Ceylon planters before them many thought that the trees would be barren. The reason for this difference perhaps lies in the fact that although the rainfall is great the evaporation is very sudden so that the trees are led to expect a drouth, which never comes. The same company are also importing seed of the *Hevea* from Ceylon and expect to plant that

on a large scale.

With regard to the yield of the Ceará trees in the Nahiku plantation, six small incisions produced an ounce of dry rubber, and this tapping may be repeated once a week through the year.

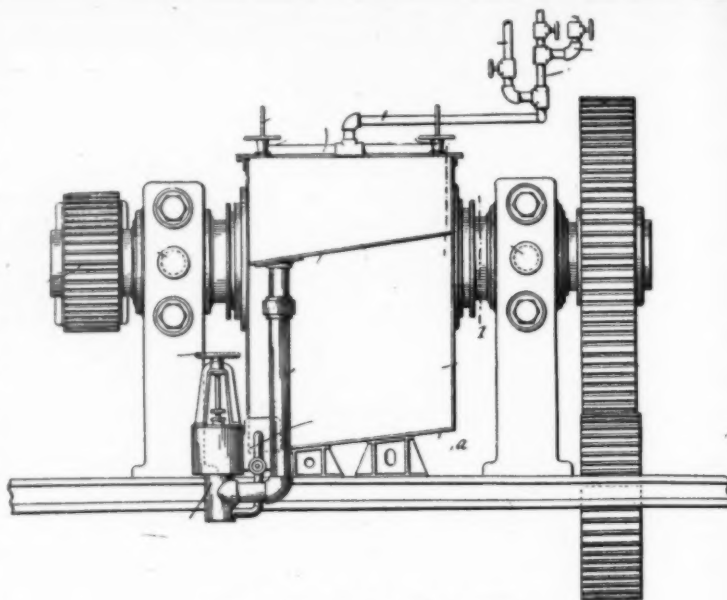
Mr. Jared G. Smith, who is in charge of the Hawaiian Experiment Station, is authority for the statement that the *Manihot* trees at Nahiku landing have already produced a pound and a half of dry rubber a year. This assures a good profit. He also mentions the recent incorporation of two more planting companies but gives no particulars further than that they are already planting and the young trees showing marvelous growth. As several leading business men from Hawaii have recently been in Ceylon and the Straits studying rubber culture it is quite likely that future planting will be in part, at least, of the *Hevea*. It is worthy of note, that the principal rubber planting in Hawaii has been done by settlers from the United States. These are small beginnings, but beginnings all the same. Just keep an eye on T. H. and see if in another decade she is not producing good rubber as well as furnishing seed for Formosa, the Philippines, Samoa, and other tropical countries.



PLANTING ON NEWLY CLEARED LAND, NAHIKU PLANTATION.

RUBBER WASHING MACHINE.

THE simplest things mechanically are oftentimes most difficult to describe, which doesn't mean that simple things are not good, but on the contrary they are very near perfection. Mr. F. C. Hood's machine for washing rubber recently patented and his process for purifying rubber appears to the writer to be both practical and valuable. The machine itself is a washer enclosed in a water-tight box where the rubber running through the corrugated rolls is not only constantly plunged into water, but is submerged throughout the whole purifying process. There is the attendant advantage also that neither rubber nor rolls can get heated during the process of washing. Further than this, the water may be drawn off at any time and fresh water substituted, or liquid solutions may be introduced, for neutralizing vegetable acids and bringing poorer grades of rubber up to a higher standard of excellence. The patent specifications take many pages to describe this, but the above is the gist of the matter. The illustration shows the exterior of the washing machine. United States patents Nos. 821,716 and 821,717, issued May 29, 1906.



A NEW MACHINE FOR WASHING RUBBER.

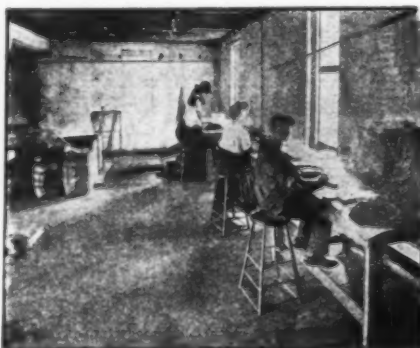
RUBBER HEELS ON FLAT DWELLERS.

IT may be true and it may not; at any rate, the New York *Sun* prints a story that will be passed along gleefully among the makers of rubber heels. A landlord in Harlem, says this chronicler, has inserted in his leases a clause making it obligatory on the tenant and each member of his family to wear rubber heels. The redeeming feature of the thing is that the landlord agrees to bear all expense of fitting the shoes of the tenants with rubber heels. One prospective tenant had the temerity to ask what would happen if he should refuse to wear rubber heels. "We would find some one who would wear them," was the reply. "We're going to stop the 'noise overhead' nuisance."

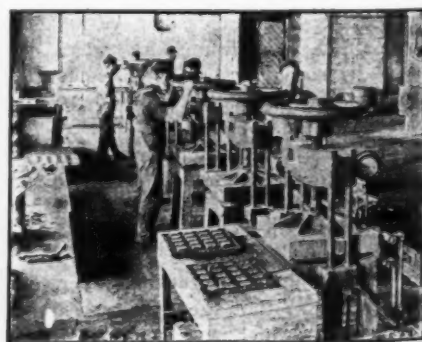
THE program of the French colonial congress to be held at Marseilles on September 5-9 provides for a full consideration of topics connected with the production of rubber, particularly in the French colonies. One topic planned is: "The falling off of the rubber production in certain places and rubber adulteration, and their causes and remedies."

WHERE RUBBER HEELS ARE MADE.

WHEN any commodity so generally known as rubber heels is spoken of, there must be many people who would feel interested in knowing something of how they are made. A single rubber heel is a small thing, but in the aggregate the business of making them is very large, and there enters into the manufacture of each one a number of processes, calling for a varied equipment of machinery. An important producer of these goods is The Springfield Elastic Tread Co. (Springfield, Ohio), whose output is known as the "Easy Walker" heel. Among the features that particularize these heels is a patent spring heel holding plate, instead of the ordinary washers often used; they are attached without gum or cement, the joints are water tight, the best rubber is used, and they are made by skilled mechanics. The accompanying illustrations show one end of the vulcanizing department and part of the trimming department, only a small proportion of each appearing in the picture. Other departments of the factory are the rubber mixing room, the department where the rubber heels are molded, and the packing and shipping department. A single pair of rubber heels seems so small a matter that the average reader may not appreciate that large factories are needed to supply the millions of pairs sold.



Trimming Department.



Vulcanizing Room.

WHERE RUBBER HEELS ARE MADE.

PNEUMATIC PLAYING BALLS.

A SILK thread pneumatic golf ball is the latest thing out in golfdom, and its origin and manufacture both belong to Akron, Ohio—that great center of golf ball production. When the pneumatic golf ball was put out, a year or so ago, it marked a great departure and attracted wide attention, and it succeeded at once in gaining a stronghold in the favor of players. This was a hollow sphere carrying compressed air to furnish the resilient quality, being wound with cotton thread to give the requisite strength, and then provided with a shell of Gutta-percha to give it toughness to resist the wear of the club in playing.

In the opinion of many players no other golf ball is so lively or resilient as the pneumatic. The heavy blow of the drive depresses the flexible wall of the ball and "touches up" the air already compressed to a resiliency far greater than pure new rubber. The pressure of the compressed air in the heart of the pneumatic ball is exactly the same in every direction, and thus keeps the ball a perfect sphere. But the instant of depression from a heavy blow is sufficient to seat the ball firmly on the face of the club and maintain the contact during more of the follow through. This is a further aid to distance and the best help in controlling direction. In the latest balls of this type improvements have been made in marking and otherwise, but a very distinct improvement remains to be mentioned.

This is the wrapping of the inner sphere with silk, instead of cotton. It was felt that the only radical improvement possible in the regular pneumatic ball was in the greater compression of the air core. In the new type, the pressure has been brought up from 800 to 1200 pounds per square inch. To withstand this greater pressure, use has been made of the most expensive fine spun silk thread, wound round and round the airtight composition which forms the inner wall of the pneumatic ball. The result is a ball particularly responsive to the driving stroke.

The resiliency of the silk pneumatic decreases consistently as the force of the stroke lessens, and in "putting" it can be given sufficient speed to maintain direction and surely reach the hole, with the confidence that it will go down and stay down. The silk wound ball is, of course, more expensive

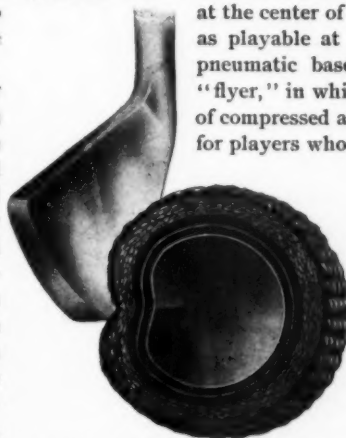
than the cotton wound, but even at its higher price it is offered as the economical golf ball.

Another product of the same firm is the pneumatic baseball, which has been used by a number of clubs in Akron and its vicinity, while the manufacturers have been getting ready the machinery necessary for making it in quantities. Many tests have indicated that the use of this ball improves the game, besides which it possesses greater durability than any balls hitherto in use. The pneumatic baseball has a compressed air center and cannot be batted soft or punky because of the strong pressure outward of the compressed air at the center of the ball. The pneumatic ball is as hard and as playable at the end of the game as at the start. The pneumatic baseball will be made in two styles—one a "flyer," in which every advantage is taken of the resiliency of compressed air, described as a great ball for town lots and for players who enjoy a batting game, and a regular league ball which is of standard size and weight. By their method of winding, the league ball is so deadened or controlled that in play it is no more lively than the standard league balls used heretofore. The pneumatic baseball will be sold at about the same retail price as other standard balls.

There remains to be mentioned a pneumatic cricket ball also made by the same firm, with which very satisfactory tests have been had in England. This, with their pneumatic polo ball, completes a line of pneumatics covering the most active sports at present popular throughout America and the English speaking countries. As has already been mentioned in THE INDIA RUBBER WORLD, the inventor of the pneumatic principle as applied to balls is Mr. A. T. Saunders. The manufacturers of all the balls here mentioned are the Goodyear Tire and Rubber Co., Akron, Ohio.

The Goodyear company are mentioned as having received lately a cabled order from Siam for 5 dozen pneumatic golf balls, and they are shipping balls to every country where golf is played. Peter Robinson, a professional near Pittsburgh, writes: "The pneumatic is the best putting ball I ever used. I never saw any ball run so true as it does."

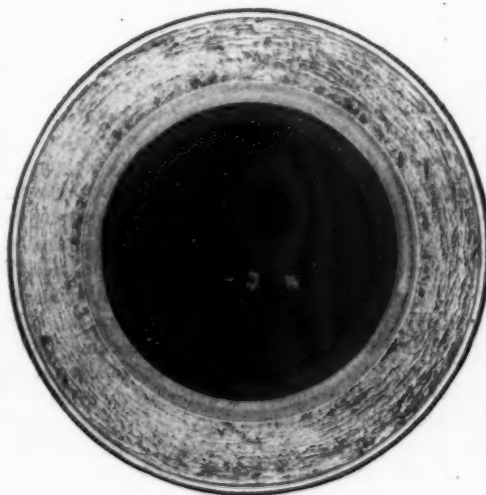
The pneumatic polo ball above mentioned was first tried at Newport last September, and was pronounced excellent in certain features by some players who urged the makers to complete the ball in all its details, and this they have since been engaged in doing, with excellent results.



REACHING THE COMPRESSED AIR.



SILK WOUND PNEUMATIC GOLF BALL.



PNEUMATIC BASEBALL.

SCRAP RUBBER IN A GRAVEYARD.

RUDOLPH LOEWENTHAL, whom the whole trade knows as a pioneer in rubber reclaiming, tells the following story upon himself. It seems that back in 1885 it occurred to him that Europe must contain vast quantities of old shoes and that they could be bought at a comparatively low price, because the European manufacturers were not then interested in reclaimed rubber. He therefore started promptly across the water and was successful in securing quantities in England, Germany, and Russia. Austria was the last country visited and there he called upon Francis Reithoff, a well known rubber manufacturer, and made known his errand. Almost immediately Mr. Reithoff was interested and said:

"I know where there is a very large quantity of old shoes which a man of perseverance can undoubtedly secure at a very low price. The shoes were shipped here by the Liverpool Rubber Co., before we Austrians were willing to wear rubber footwear at all. There was no market for them. The Liverpool company, with true British persistence, absolutely refused to allow their agents to ship them back, and said they must find a sale for them, and that finally came about in a very curious way. Our people here, as you know, are buried in full dress, one important part of which is the patent leather shoe. The man who had the rubber shoes on hand, appreciating this, approached the great burial associations and sold these shoes to clothe the feet of the defunct. If you will, therefore, go to our beautiful graveyard, you will find there probably the largest collection of old rubber shoes that are anywhere in Austria."

RAIN AND THE AMAZON RUBBER CROP.

THE opinion is expressed by the United States consul general at Rio de Janeiro, in a recent official report, that the Amazon rubber production of next season will indirectly be influenced through the copious rains in a very peculiar way. The production, he says, is limited not so much by the demand or by the crop—those two factors have recently been steadily favorable to the producers—but by the facility with which labor can be procured for this unhealthy industry. By far the largest contingent of the rubber cutters in the Amazon regions is furnished by the state of Ceará, where there prevails in about seven years out of ten a famine caused by the excessive droughts. Through this famine the native labor is forced to accept the offers of the rubber estates on the upper Amazon and its affluents. The conditions on which those poor people have to accept labor are such that only the direct necessity induces them to avail themselves of the offers. This year, however, the state of Ceará, on account of the abundant rains that prevail there, will furnish a good living for all of its citizens, and probably very few will be forced to risk their lives in the rubber plantations.

The consul might have added, however, that the upper rubber fields have gradually attracted an increasing number of permanent residents, including Cearenses. Hence the failure of as many workers to go upstream as in some former years may not have the same effect on rubber production.

ELECTRIC HOT WATER BOTTLE HEATER.

ALL the annoying features of varying temperature for hot water bags has been done away with by the recent invention of an electric heater which can be applied to any bag. This little attachment placed in the stopper of the bottle is connected to the electric light socket in the same manner as a bulb, by the ordinary lamp cord. It can readily be transferred from one room to another; it is simple; it is durable;



there is no danger in its use; it is inexpensive and it maintains an even temperature, thereby increasing the value of the hot water bag in cases of illness where such temperature is desirable. Another very practical argument in its favor is that with its use there will be no boiling water necessary, hence no more burned hands: for despite the blessings that the bag has brought, it has been responsible for many ugly burns. [Standard Electric Heater Co., St. Louis.]

HOT WATER BOTTLES FOR SEA SICKNESS.

AN old traveler, who has made no less than 30 voyages across the Atlantic, is authority for the statement that the nearest approach to an absolute preventive of seasickness is a hot water bottle. He asserts that *mal-de-mer* is caused primarily by the motion of the ship, but secondarily by the body having become chilled. Where the body is kept warm at all times, he says, seasickness is very rare, and even those stricken have only slight attacks. The ocean traveler is advised to keep a hot water bottle under his feet when on deck, then, when he retires, he should keep a steaming hot water bottle in his bunk for 15 or 20 minutes before he turns in. The sea air is moist and the bedding is certain to become damp during the day, thus imparting a chill to the sleeper at night. This is overcome by the use of a water bottle filled with the hottest water obtainable.

MR. J. JACKSON TODD, formerly president of the Chicago-Bolivian Rubber Co., has just returned from a visit to rubber plantations throughout Mexico and Guatemala.

NEW GOODS AND SPECIALTIES IN RUBBER.

FLEXIBLE BUTT PAD.

EACH season the methods of those preceding give way to the progress of the times, which manifests itself alike in the utilitarian world and the world of sports.

Especially in the summer when the minds of so many dwell upon the pleasures to be derived from relaxation and rest, are the recent inventions conducive to the increased ease or pleasure, or both, most sought. Fishermen everywhere are striving to find new and improved devices whereby they may lure the unwary little or big fish to more certain death. Frazer's Flexible Butt Pad is said, really to put the finishing

touch to the first class casting rod. Anglers hold that there is no possibility of having the rod slip under any circumstances. It fits the contour of the body at any angle at which the rod may be held. When the rod is laid down in the boat if the butt pad is rested on one of the longitudinal ribs, the flexible flange drops back of the rib and secures the rod from rolling out of place. It is advertised to save "the big ones," the rod, and the temper. [Sportsman's Specialty Co., Milwaukee, Wisconsin.]

RUBBER SUCTION GRIPS.

SOMETHING that is attracting widespread attention among golfers are the Rubber Suction Grips, which are said to

have been the means of raising the standard of the popular game, inasmuch as it insures a much firmer footing, and this, in turn, meaning a better play. No objectionable features seem to arise for criticism as these grips can be easily attached to the shoes, are equally as effectual for actual service on baked, frozen or wet ground, there is no metal surface exposed to mar the floors of the club houses, and it is ex-

ceedingly comfortable. The golfers who have experienced the difficulty of securing a firm footing on the links, and have not yet seen these grips, have something in prospect to enhance the pleasures of the games of the coming summer. The editorials of the various golfing journals have been unqualified in their endorsement. [The Suction Grip Co., No. 242 Market street, Philadelphia.]

NEW RUBBER ERASERS AND STENCIL.

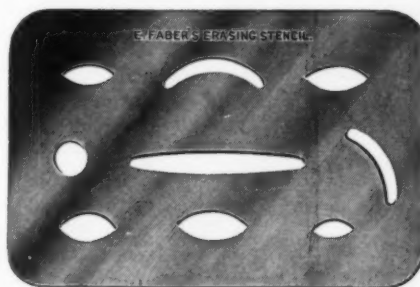
WHEN work of a particularly neat order finds its way from certain desks, it is a reasonably certain indication that quite as much attention has been paid to the choice of an eraser as to any of the other desk appointments. This would seem one of the non-essentials, but upon second



thought it will readily be seen that upon this much depends. One that is being looked upon with favor at the present time is the new combination ink and pencil eraser, cone shape, held in clamps and inserted in each end of a metal case of gun metal finish. In this combination case the



eraser that is slightly tinged with red is for the pencil. Another of somewhat different shape is the Elite, the erasers being held by metal oxidized band. The stencil eraser which is of nickel plate, perfectly flat, is a great promoter of neatness as it covers the writing that otherwise might be



inadvertently rubbed, while the letter or word for erasure alone is left visible through one of the various apertures over which the stencil is placed. These erasers and the stencil are manufactured by Eberhard Faber, New York.

THE OMO DRESS SHIELD.

To the majority of women the dress shield is a very important toilet adjunct. There are great difficulties that present themselves in the matter of selection, however, as so many requisites are really necessary in that this innocent looking little bit of rubber may do its perfect work. Oftentimes one feature is sacrificed to another in order to specialize and the fairer wearer wonders if an ideal combination really exists. The Omo claims for its product this distinction. The curvette, zouave, out-of-sight, detachable, linen mesh and short flap are some of the varieties, all of which they claim as odorless, impervious and hygienic. The journals of health and the medical profession have united in their tributes, thus extending its popularity. [The Omo Manufacturing Co., Middletown, Connecticut.]

INDESTRUCTIBLE WHITE SHEET PACKING.

A SHEET packing that will stand the highest pressure is one that is in the greatest possible demand. Extreme heat,



too, is one of the severe tests to which packing is also necessarily subjected. The packing shown in the accompanying illustration has many qualities that recommend it to the consumer. It does not become affected by ammonia, liquor, or alkali, making a tight joint

when used for steam, air, hot or cold water. It does not dry out or become hard and brittle, but retains its tough elastic qualities either in or out of service. It will not blow out under any pressure, and the joint can be broken numerous times without renewing the packing. [New York Belting and Packing Co., Ltd.]

FLUFF BAND SNOW EXCLUDER.

THESE bands are designed to keep the feet warm and dry and are admirably suited to the purpose. They are attached



to leather leggings, and are usually worn over a leather slipper sock, and these leggings are put on before the overshoe. The fluff band falls below the ankle, and when the overshoes are put on the top of the fluff is a good bit over the top of those, thus making it practically impossible for any snow to find its way inside of the over-

shoe, and the band of necessity keeps out cold as well. The leggings are easily removed, which is a feature that also makes them desirable. Both for wear in snow and cold they seem to offer splendid possibilities of comfort. [The Merchants' Rubber Co., Limited, Berlin.]

A RECEPTACLE FOR ASHES.

THAT woman's extremity is woman's opportunity is a paraphrase of an old adage, that might well be applied to the recent invention of a woman. However, even if she is the chief beneficiary, man also is directly benefited, for by its use he can enjoy the luxury of his cigar in any place without a thought of what will become of the ashes. This convenient little device is a rubber ash receptacle which takes up but a little space in the pocket, and when it is to be used a slight pressure opens the mouth of the fish (for the little invention has assumed this form) and the ashes are deposited and give no further trouble. When the pressure is removed the mouth closes tightly, retaining the contents until such time as the smoker shall see fit to empty the fish in order to recapacitate him. The pocket of every smoking jacket should be provided with a rubber fish.

ICE CREEPER.

THOUGH ice creepers are not used to any extent in the United States, yet our Canadian friends just to the north of



us find them almost indispensable. These creepers are made in many styles, but those of rubber with the metal spikes, supplied by the Canadian Rubber Co. of Montreal, Limited, are proving most satisfactory. They are modeled somewhat after the plan of the foot-holds, the rubber strap fitting over the instep, while the spikes project from a substantial rubber heel covering, which is held in place by the strap. These come for both men and women. If their use were more universal the injuries arising from falls on the ice might be lessened, and while their actual necessity does not often occur in this climate, the innovation of an occasional wearing might prove the ounce of prevention that is better than a pound of cure. They are not cumbersome in the form here described and would not be awkward to wear.

DETACHABLE RUBBER HEEL.

A RUBBER heel that can be used on different shoes is one of the conveniences recently launched on a willing purchasing public. By means of a pronged metal plate, and curved ribs, the heels are attached, and the process of detaching, when the heels are wished for another shoe, is most simple, the insertion of a thin metal bar, or small screw driver, is sufficient to disengage the plate so that the rubber heel may be removed. The adjustment is simple and the many advantages to be derived from the use of this comparatively new invention outweigh all the inconveniences of being one's own shoemaker. Rubber heels are used so extensively that this device will be greeted with very general favor. The inventor is Nils P. Bolin, Brockton, Massachusetts.

A NEW RUBBER REDUCING SUIT.

WITH the approach of the torrid months, when everybody is sweltering or preparing to, it would seem that nature's methods of inducing perspiration were all-sufficient. But such is not the case with everybody. Shakespeare, or somebody once expressed a wish that "this too, too solid flesh would melt," but the desire was unfulfilled because in those days rubber flesh melters were not known. Nowadays the corpulent one would only need to don one of Riker's Reducing Suits, go about his work, or play, and think no more about it. In due time, when his flesh had been reduced to the desired point, the suit could be discarded until it should be needed again. This reducing suit differs in many respects from others on the market intended for similar uses. It is made in two pieces, almost exactly like ordinary underwear, and is adjusted the same way. It is made of pure gum of high grade and is said to be most efficacious as a superfluous flesh dissolver. [William B. Riker & Son Co., New York.]

THE government of Southern Nigeria, in West Africa, has advertised at Singapore for 20,000 seeds of *Hevea Brasiliensis*.

RECENT RUBBER PATENTS.

UNITED STATES OF AMERICA.

ISSUED MAY 29 1906.

- N**O. 821,679. Tire for vehicle wheel. [Pneumatic.] J. Thomson, Invercargill, New Zealand.
- 821,692. Hose clamp. J. W. Adams, Pasadena, Cal.
- 821,722. Striking bag or other fluid receptacle. C. A. Lindsay, New York city.
- 821,817. Soft tread horseshoe. J. McDermott and J. C. McBean, Chicago.
- 821,858. Pneumatic tire. H. L. Christiansen, assignor of one-third each to H. Tidemand and Ole Worm Dahl, both of Boston.
- 821,859. Automatic air brake controller. T. Clegg, assignor of one third each to A. McKinny and R. A. Bonnar, all of Winnipeg, Canada.
- 821,868. Armor for cycle tires. E. Grimme, Dittersbach, Germany.
- 821,871. Cushioned pneumatic tire. D. B. Hislop, Aberdeen, Scotland.
- 821,879. Fountain paint brush. G. Meyer and C. G. Braun, Philadelphia.
- 821,940. Fountain pen. J. Holland, Cincinnati.
- 822,021. Tire for vehicles and the process of making the same. T. C. Sanderson, West New Brighton, N. Y.
- 822,110. Syringe for subcutaneous or other injections. A. A. Galliot, Paris, France.
- 822,173. Storm front for buggies. J. A. Wilson, assignor, by mesne assignments, of one-half to L. D. Wilson, both of Georgetown, Ohio.
- 822,177. Protecting cover for pneumatic tires. E. Bardou, L. Clerc, and B. Desouches, Paris, France.

Design.

- 88,038. Eraser tip. F. McIntyre, assignor to Eagle Pencil Co., both of New York city. *Claim.*—The ornamental design for an eraser-tip.

Trade Marks.

- 12,434. Nursing bottle nipples. Davidson Rubber Co., Boston. *Essential feature.*—The words NO COLIC NIPPLE, the letters N and C and the representation of a nipple, being in the form of a monogram.
- 17,352. India-rubber binding. Knapp Rubber Binding Co., New York city. *Essential feature.*—The words BIND THE RAGGED EDGE.
- 17,739. Rubber and hemp packing. Hibbard, Spencer, Bartlett & Co., Chicago. *Essential feature.*—The letters O V B with a panel extending across the same upon which appear the words OUR VERY BEST.

ISSUED JUNE 5, 1906.

- 822,307. Pneumatic tire protector. W. W. Scarborough and C. E. Schultz, Knoxville, Tenn.
- 822,366. Rubber boot. C. M. Hannis, Hudson, Mass.
- 822,423. Hose coupling. R. Bates, Tamaqua, Pa.
- 822,439. Tire construction. W. F. Ellis, Stamford, Conn., and E. C. Davis, New Brunswick, N. J., assignors to The Universal Tire Co., New York city.
- 822,518. Wheel [With elastic tire.] A. Freschl, Chicago.
- 822,561. Apparatus for manufacturing wheel tires. P. D. Thropp, Trenton, N. J.
- 822,583. Vehicle tire. J. Christy, Akron, Ohio.
- 822,640. Milking machine. T. M. Wade, Lithopolis, Ohio.
- 822,651. Tire armor. J. Coan, Kansas City, Mo., assignor of one-fifth to R. W. Coan, Gravity, Iowa.
- 822,692. Rubber boot. F. F. Schaffer, Naugatuck, Conn., assignor to Rubberhide Co.
- 822,711. Rim and tire fastening for wheels. R. H. Atcheson and J. H. Walsh, Chicopee, Mass.
- 822,786. Elastic wheel tire. W. Struck, Berlin, Germany.
- 822,839. Process for facilitating the removal of roots of stumps. M. A. Fry, Seattle, Wash.
- 822,882. Life preserver. S. Citron, assignor of one-third to S. B. Baumsee, both of New York city.

Trade Mark.

- 9,551. Waterproof collars and cuffs. The Celluloid Co., New York city. *Essential feature.*—The words SOLID FIBRE.

ISSUED JUNE 12, 1906.

- 822,949. Horseshoe. H. W. Hibbard, Milwaukee, Wis., assignor to Ogden Cushion Horse Shoe Co.
- 823,014. Protector for cigars [made of a thin elastic material]. F. H. Whomes, Los Angeles, Cal.
- 823,054. Process of treating vulcanized rubber waste. W. A. Kōneman, Chicago.
- 823,069. Vaginal syringe. J. T. McCarthy, assignor of one-half to J. J. Riordon, Jr., both of Baltimore, Md.
- 823,093. Wheel rim. H. B. Williams, New York city.
- 823,246. Waterproofing composition. J. Wessel, New York city.
- 823,328. Fountain pen. A. Hall, Chicago.
- 823,331. Overshoe. C. L. Higgins, Montreal, Canada.
- 823,344. Pump piston and packing therefor. W. M. Maloney, Chipmonk, N. Y.
- 823,409. Vaginal irrigator. T. W. Heuston, assignor of one-half to L. D. Winfers, both of Coffeyville, Kansas.
- 823,454. Vehicle wheel. W. S. White, Chattanooga, Tenn.

Trade Marks.

- 9,554. Waterproof shirt fronts, collars and cuffs. The Celluloid Co., New York city and Newark, N. J. *Essential feature.*—The word VICTOR.
- 9,556. Same. *Essential feature.*—The word symbol ULTIMA.
- 12,058. Electrical insulating and protective devices. The Johns-Pratt Co., Hartford, Conn. *Essential feature.*—The hyphenated word JOHN-PRATT.
- 12,800. Rubber tires for vehicle wheels. The Electric Rubber Mfg. Co., Rutherford, N. J. *Essential feature.*—The word PANTHER.
- 14,001. Syringes. Johnson & Johnson, New Brunswick, N. J. *Essential feature.*—The word BELLEVIEW.
- 17,734. Golf balls. The Kempshall Mfg. Co., New York city. *Essential feature.*—The word CLICK.

ISSUED JUNE 19, 1906.

- 823,500. Truss. A. P. Barlow, St. Joseph, Mich., assignor to P. G. Kniebes, Benton Harbor, Mich.
- 823,510. Hose coupling. N. A. Christensen, Milwaukee, Wis.
- 823,680. Tire cover. J. P. Gordon, Columbus, Ohio.
- 823,839. Tire. W. M. Wright and E. Carson, Beaver, Pa.
- 823,918. Eraser. F. M. Burrows, Pittsburgh, Pa.
- 823,923. Apparatus for manufacturing rubber footwear. M. C. Clark, Providence, R. I., assignor to Marvel Rubber Co., a corporation of Rhode Island.
- 823,924. Manufacture of rubber footwear. *Same.*
- 823,925. Manufacture of rubber footwear. *Same.*
- 823,926. Manufacture of footwear. *Same.*
- 823,928. Process for manufacture of vulcanized footwear. *Same.*
- 823,938. Wheel. [With elastic tire.] M. Dixon, Long Island City, N. Y.
- 823,975. Device for filling fountain pens. H. B. Smith, Janesville, Wis.
- 824,041. Implement for putting on pneumatic tires. P. F. Pil-liner, Philadelphia, Pa.
- 824,048. Insulated coil for electrical apparatus and process of making the same.
- 824,071. Rubber balloon bag. H. B. Faber and H. E. Seal, New York city, assignor to Rubber Balloon Co. of America, New-ark, N. J.

Design.

- 38,095. Rubber binding. C. E. Knapp, New York city. *Claim.*—The ornamental design for rubber binding as shown.

Trade Marks.

- 17,369. Atomizers and powder blowers. The DeVilbiss Mfg. Co., Toledo, Ohio. *Essential feature.*—The word DEVILBISS.
- 17,733. Golf balls. The Kempshall Mfg. Co., New York city. *Essential feature.*—The word FLYER.
- 18,633. Rubber heels. Thompson-Ehlers Co., Chicago. *Essential feature.*—The word VICTOR.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the Application, which in the case of those listed below was in 1905.

* Denotes Patents for American Inventions.

[ABSTRACTED IN THE OFFICIAL JOURNAL, MAY 30, 1906.]

- 1,703 (1905). Heel protector. T. H. Roberts, St. Annes-on-the-Sea, Lancashire.
 1,704 (1905). Means for preventing puncture and side slip. S. Shepherd, Meadow View, Brightside, and T. A. Vincent, Sheffield.
 1,707 (1905). Colotomy truss. E. E. Hyatt, Queensbury, near Bradford, Yorkshire.
 1,746 (1905). Means of attaching a tire carrying rim to wheel felloe. M. A. Lemmercier, Paris, France.
 1,787 (1905). Mold for tires [having recesses on each side which receive the wires and form the beading]. T. J. R. Clarkson, Aston Manor, and G. Welch, Erdington, both in Warwickshire. (No patent granted—sealing fee not paid.)
 1,790 (1905). Buoyant wearing apparel. H. G. Forrester, London.
 1,989 (1905). Heel protector. C. P. Horton, Birmingham. (No patent granted—sealing fee not paid.)
 2,025 (1905). Hat pad. [Inflation takes place through a flexible tube inside the pad.] A. Dunhill, Great Missenden, Buckinghamshire.

[ABSTRACTED IN THE OFFICIAL JOURNAL, JUNE 7, 1906.]

- 2,252 (1905). Leather band for preventing slipping and punctures in pneumatic tires. L. Cox, Birmingham.
 * 2,255 (1905). Elastic tire. J. A. Swinehart, Akron, Ohio.
 2,281 (1905). Band, consisting of metal segments, for preventing skidding of pneumatic tires. C. L. Harrison, Birmingham.
 2,454 (1905). Method of attaching elastic tires to rims. H. H. Lake, Middlesex. (E. Cantono, Rome.)
 * 2,457 (1905). Fountain pen. J. Y. Johnson, London. (Eagle Pencil Co., New York city.)
 2,517A (1905). Vehicle wheel. [The tenons of the spokes are formed wedge shaped the full width of the felloe, which is formed in segments bearing on an interposed layer of India-rubber. T. Gare, New Brighton, Cheshire.
 2,572 (1905). Heel protector. F. A. Ellis, London.
 2,575 (1905). Method of utilizing India-rubber waste. R. R. Gubbins, London.
 2,592 (1905). Steel band for retaining solid tires. M. Polack, Thuringia, Germany.
 2,655 (1905). Method of devulcanizing waste rubber and utilizing the same. C. A. R. Steenstrup and Aktieselskabet Gummiregenerations-Societet (System Resen Steenstrup), Copenhagen.
 2,671 (1905). Fountain pen. T. De La Rue & Co. and E. De La Rue, London.
 2,706 (1905). Pneumatic tire. [The thick tread part of a cover formed with the bottom and sides in one piece fits into a gap formed in the cover, which is molded with flanges and beadings engaging with recesses formed in the tread part.] S. Lawton, Manchester.
 2,747 (1905). Method of preserving electric cables. [In cables insulated with India-rubber an oilproof coating is placed between the rubber and the outer cover.] C. J. Beaver, Cheshire, and E. A. Claremont, Manchester.

[ABSTRACTED IN THE OFFICIAL JOURNAL, JUNE 13, 1906.]

- 2,794 (1905). Life boat. [Near the gunwale at each side of the boat is attached a tube of India-rubber held in a covering and supported by a trough to which it is secured by bolts.] L. Robinson, Newcastle-on-Tyne.
 2,848 (1905). Elastic tire [the base of which is formed with wedge-shaped keyways in which engage keys formed on the side flanges of the rim]. J. C. and J. T. Akermann, London.
 2,870 (1905). Elastic tire [formed to receive blocks of rubber capable of radial adjustment for wear]. W. B. Hartridge, London.
 2,970 (1905). Elastic tire. G. Bardet, St. Leu Taverny, Seine-et-Oise, France.
 2,977 (1905). Vehicle wheel. [For securing a pneumatic tire the rim has one side flange detachable.] J. M. Padgett, Topeka, Kansas.
 3,043 (1906). Elastic tire. [To permit the whole of the tire to be utilized as it wears down, the rim flanges are replaced inward-

ly so that any amount of the tire projects beyond the flanges.] W. B. Hartridge, London.

- 3,091 (1905). Pneumatic tire [provided with one or more rows of inclined recesses which may be charged with compressed air]. C. Burnett, The Grange, Durham.
 3,144 (1905). Spray producer. O. A. Elias, London.
 3,172 (1905). Leather band for preventing slipping of pneumatic tires. J. Albiston and W. Lobeck, London. (No patent granted—sealing fee not paid.)
 3,220 (1905). Leather cover for wheel tire. W. J. Donald, Glasgow.

[ABSTRACTED IN THE OFFICIAL JOURNAL, JUNE 20, 1906.]

- 3,322 (1905). Method of cutting rubber heels, washers, etc. W. Butters, Dundee, Scotland.
 3,326 (1905). Dental instrument [consisting of a rubber piece fastened to a handle and formed with a projection for pressing the material into the cavity]. P. F. Rutterford, London.
 3,354 (1905). Exercising apparatus. F. M. Cleese, London.
 3,412 (1905). Golf ball [the center of which consists of aluminum or steel]. J. W. Stocker, London.
 3,413 (1905). Cover for pneumatic tire [constructed with endless warp threads]. C. L. Marshall, Surrey. (Grant of patent opposed.)
 3,428 (1905). Protective device for preventing skidding of pneumatic tires. W. T. W. H., and P. C. Philipson, all of Holland Street Iron Works, Bolton, Lancashire.
 * 3,499 (1905). Vehicle wheel. [A rim having one or both edges removable to facilitate attachment and detachment to the tire, and reversible to accommodate tires of different sizes.] F. A. Seiberling, Akron, Ohio.
 3,559 (1905). Boot. [A waterproof lining is made in one piece from India-rubber molded into a shape somewhat like an overshoe.] W. J. Robinson, Tyrone, Ireland.
 3,572 (1905). Pneumatic tire. [Metallic rivets or studs are used in the cover.] C. Joly and R. Boucher, London.
 3,598 (1905). Pneumatic tire [inflated by means of a cartridge containing air under pressure]. A. G. Lavertine and J. E. McNellan, Johannesburg, Transvaal.
 3,673 (1905). Non-slipping tread [made of leather for the soles and heels of boots and shoes and formed to receive a number of rubber studs]. T. Spencer, and Spencer's Dovetail Heels, Ltd., Cardiff, Glamorganshire.
 3,729 (1905). Sole and heel protector. P. T. Barlow, Brinnington, and F. Brocklehurst, Stockport, Cheshire.
 3,744 (1905). Method of forming recesses in washers for use with rivets and applicable to form outside wearing surfaces for pneumatic tires. A. W. Knight London.
 * 3,765 (1905). Elastic tire [formed in length with a stiffened base of ply fabric, which is capable of elastic buckling laterally]. W. Langmuir, New York city.
 * 3,772 (1905). Reversible tire cover [consisting of a metallic fabric having the warp composed of twisted strands of wire each comprising a number of strands twisted about a fibrous core]. A. H. Rochfort, Point Reyes, California.
 3,792 (1905). Cover for pneumatic tire. S. W. Carlton, London.

THE FRENCH REPUBLIC.

PATENTS ISSUED (WITH DATES OF APPLICATION.)

- 359,892 (Feb. 6, 1905). Aubry and Jolibois. Decorticating machine.
 359,942 (Nov. 29). H. H. Frost. Vulcanizing machine.
 359,947 (Nov. 30). E. Louet. Puncture proof tire.
 360,008 (Dec. 1). O. Englebert Fils & Cie. Puncture proof tire.
 360,043 (Dec. 2). Benoît-Martinot and Lucas. Tire protector.
 360,051 (Dec. 2). Continental Caoutchouc and Gutta Percha Co. Multiple pneumatic tire.
 360,149 (Dec. 6). Herault. Detachable tread.
 360,090 (Dec. 5). Bretnacher. New use for substitute rubber commonly called "Lynosyne."
 260,203 (Nov. 30). E. Charles. Tire protector.
 360,342 (Dec. 12). A. de Laski and Thropp. Rubber thread tissue.
 360,225 (Dec. 8). Metallo-elastic tire.
 360,393 (Dec. 13). A. Booker. Rubber tire.

[NOTE.—Printed copies of specifications of French patents may be obtained from R. Bobet, Ingenieur-Counsell, 16 avenue de Villiers, Paris, at 50 cents each, postpaid.]

AIR DRYING VERSUS VACUUM DRYING.

THE usual method of drying rubber is by means of hot air, passed through drying rooms by means of fans or similar devices. It is an established fact that this type of drying is most uneconomical, as only about one-third of the heat carried by the air is given up to the material that is to be dried and consequently about two-thirds of the fuel consumed is wasted. The reason is that, though the carrying capacity of hot air with moisture is naturally greater than one-third, still if any evaporation at all on a commercial basis is to be achieved, the air has to travel rapidly through the drying rooms and consequently is unable to utilize all of its carrying capacity. If the air is allowed to travel at a slower rate and thereby given opportunity to charge itself with a higher percentage of moisture, the evaporation becomes sluggish and the results are the same.

It should also be remembered that the large volume of air required for effective drying absorbs much motive power for the driving of a fan and thus adds to the cost of the process.

Another thing, the materials to be dried have to be placed sufficiently far apart to allow a free passage of the heated air so that the buildings occupy considerable space, and the process is necessarily of long duration, thus tying up capital and causing loss of interest and the payment of high insurance premiums.

A further disadvantage of the hot air system is that it unavoidably carries quantities of dust with the hot air, which is deposited on the wet and adhesive surfaces of the drying materials, in many cases destroying their value. This dust nuisance may be avoided only by installing large and expensive dust filters.

The dust drawback cannot take place under the vacuum system, as the vessels used for this purpose are hermetically sealed. Further, an advantage of the drying in such vessels is that the process is entirely independent of any climatic conditions, which largely influence all drying under atmospheric pressure.

Moreover the hot air drying has a tendency of hardening some materials, as for instance, is shown by the considerable shrinkage and wrinkling of the air dried leather.

If any porous fabric is treated under vacuum instead of closing up its pores, the very reverse is obtained by rapid boiling, the water being removed from the interior almost as rapidly as from the surface. This will be particularly referred to later on in a specification of a new impregnation process.

The above drawbacks attached to the drying methods at present used have led to a very general use of a vacuum in the place of hot air, with most satisfactory results, and among the most suitable vacuum apparatus with condensers and vacuum pumps, are those of the Emil Passburg System.

By this it is possible not only to remove moisture economically, but also to remove it at so low a temperature as to absolutely exclude deterioration in quality. It is also the only means for quickly and absolutely removing all moisture. This latter item is one of the most important features where insulating material for electrical apparatus is concerned. In this it is not the gain of time or application of a

low temperature which is of the greatest importance, but the dryness of the insulating material, as only an absolutely dry insulator can insure a perfect conduction of electricity.

With drying by means of hot air, the drying material can never be brought to a higher degree of dryness than the heated air itself, the latter naturally always carrying a small percentage of moisture, and even could the drying material go below this percentage, it would naturally re-absorb the moisture from hot air.

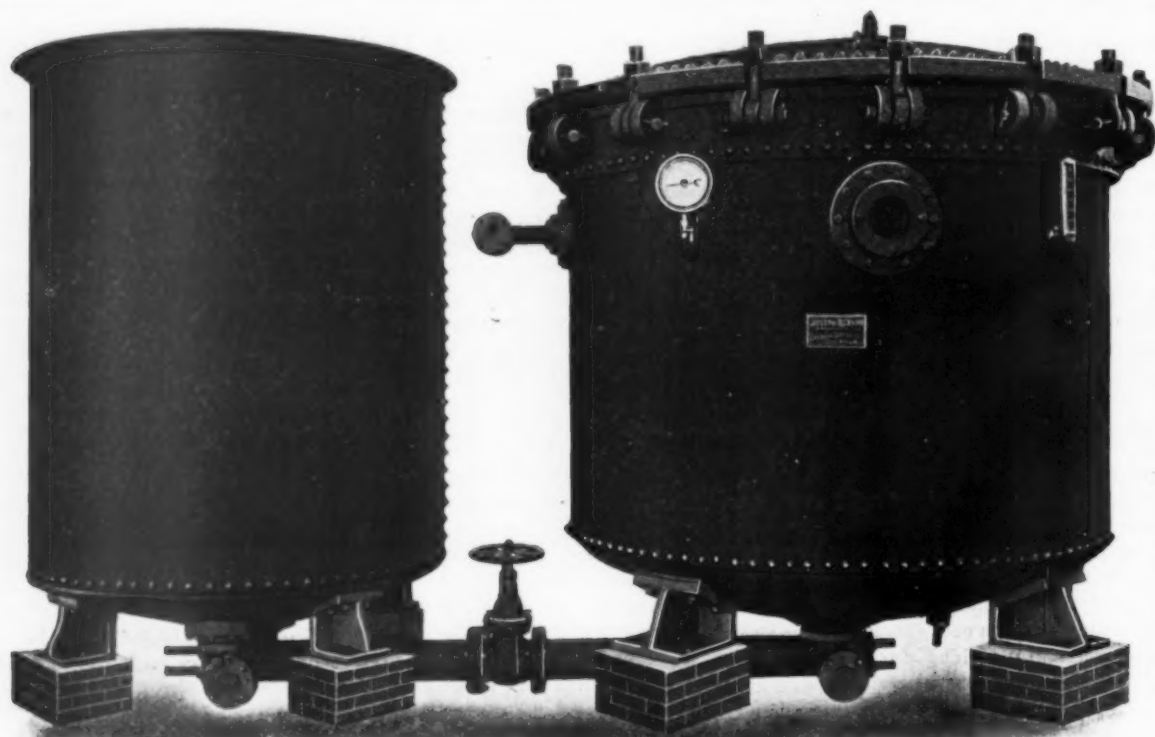
Under vacuum the slow evaporation such as exists under atmospheric pressure is turned into a rapid boiling of the water, not only not raising but lowering the temperature, as the boiling point is reduced from 212° to about 95° F. This also explains the enormous saving of time in removing the water and the saving of heat or fuel, as naturally much fewer units of heat have to be transmitted to be evaporated.

Certain materials for certain purposes have to be impregnated with various kinds of colors, dyes, or compounds, for water repelling, insulating, acid resisting purposes, etc., according to the purpose they are to be used for, but notwithstanding the perfect state of dryness of materials treated under vacuum, defects will appear after such impregnation if done under atmospheric pressure. The reason for this is that the impregnation is not thorough. In other words, the inner parts of the materials were not at all or only insufficiently impregnated. It was found that when these compounds were of a very heavy nature, even at a high temperature they could not penetrate closely woven fabric or the pores of materials on account of the air contained within. Then, too, such liquid moved sluggishly and with great friction.

Now it has been found that removing all air from the pores *in vacuo* that the impregnation was complete. This is done in a specially constructed apparatus. To explain this improvement, it must be borne in mind that by such evacuation not only the air is removed from the material that is to be impregnated, but in addition to this the assistance of the atmospheric outer pressure under which the impregnating compound was entering the insulating material was obtained, a pressure varying from 14 to 15 pounds. Even by means of such improvement, the modern requirements for insulating material used in the electrical trade could not be satisfied. The electrical current of high tension required still better insulation.

To obtain this, the following means were adopted: After having allowed the impregnation compound to enter the vacuum impregnation vessel by means of the outer atmospheric pressure, this was increased by adding artificial pressure (compressed air) to the required extent, so that not a particle of even the innermost insulating material, was left free from compound, no matter how it was protected by outer layers of covered wire. Naturally, the vessel in which this impregnation takes place must be made strong enough to stand an outer pressure and also afterwards an inner pressure.

The enforced impregnating or combined impregnating process under vacuum, together with artificial pressure, is only necessary for materials which are of a very close texture



VACUUM DRYING AND IMPREGNATING APPARATUS.

[As made by the J. P. Devine Co. (Buffalo, New York), under American Rights granted to them by the firm of Emil Passburg, Berlin]

or have to be treated with very heavy compounds. It must not be understood that the drying under vacuum and impregnation under vacuum and afterwards under higher pressure must necessarily take place in the same vessel. The drying under vacuum may take place in one vessel and the impregnation in a second one. When removing the material from the vacuum dryer into the vacuum impregnator, it is necessary to break the vacuum in the former vessel and allow the atmospheric air to enter it and naturally the pores of the insulating material. As this air only fills such pores once and can only once deposit the moisture it carries, such moisture will have no detrimental effect whatever, as in the first place it has no circulation and but little enters anyway, as such. In addition to this, as soon as the material is placed in the vacuum impregnating vessel, the latter, which can be fitted with heating coils, etc., is evacuated and the material is not only at once freed from the atmospheric air, but also from any particle of moisture which it could possibly have absorbed during this short interval. This is only mentioned so as to dispel any doubts as to the impracticability of using two instead of one vessel for drying and impregnating.

As in many cases solvents of a volatile nature are used with compounds for impregnation for the above described purposes and as the drying and impregnation process takes place under vacuum and as consequently if with such vacuum impregnation and drying vessels, vacuum pumps

and suitable condensers, are connected, any volatile solvents, apart from the water which naturally is being removed during the first drying process, and before the impregnation process, can be regained in such condensers during the second drying.

The whole resolves itself, therefore, into three processes: (1) to dry under vacuum; (2) impregnation under vacuum, with the assistance of the outer atmospheric pressure; and (3) to increase this impregnation by artificial pressure in addition to the atmospheric, of which the advantages as compared with the former processes have been above described; (4) to further the recovery of all valuable solvents.

ONE of the minor uses of India-rubber which in the aggregate has become important is in connection with carpet sweepers. The amount required for a single sweeper is not large, but on the whole the rubber required runs into many tons annually. Each sweeper has four wheels, and each wheel has a rubber tire. Besides this, the mechanism of the sweeper is operated by means of a small rubber belt connecting with each axle. When it is remembered that the Bissell Carpet Sweeper Co. (Grand Rapids, Michigan) alone turn out 7000, or more than 2,000,000 a year, the importance of this industry to the rubber trade can be easily appreciated. The rubber bands used are manufactured especially for this concern by one of the largest rubber concerns in the United States.

HOW RUBBER ARRIVES AT NEW YORK.

OF the many interesting sights along the water front of a great seaport, there is none more fascinating than to witness the discharging of cargo from the large ships. There is always something new to be seen, at least to the average observer—indications of unfamiliar channels of trade, or the sight of commodities that he has not seen before, and there is a charm in the glimpses of foreign life that may be gained. Not least interesting is the business of receiving crude India-rubber, especially the cargoes which arrive at New York several times each month, by steamer from the Amazon.

Few people not in the trade would imagine how much skill and labor are required in stowing and discharging a large consignment of rubber, and the rolls of red tape that must be unwound before the last operation has been completed. Rubber from the Amazon arrives packed in wooden cases, the weight of the contents varying with the grades of rubber, the finer sorts being packed in the smaller cases. Fine Pará rubber usually is packed 170 kilograms (=374 pounds) and coarse 320 kilos (=704 pounds) to the case. The cases are of inch pine stuff, which generally has been shipped from New York. The packages containing Caucho are apt to be less regular in size, being often the empty goods boxes for which the local merchants in the rubber country have no further use.

The rubber being subject to an export duty at the point of shipment—Manaos or Pará—is carefully weighed at starting in order that the taxing authorities may exact the utmost milreis. That detail having been disposed of, the rubber is replaced in the cases, which are securely fastened with metal bands, and put on board a steamer, which often carries nothing else. The rubber is "stowed" in the hold with such nicety that the shipment seems to have been made to fit the vessel, and so as to preclude the possibility of a shifting of the cargo in case of rough weather. As the basis of freight charges is the space occupied, and not the weight, it is desirable to get as much rubber as possible in the space paid for. Hence the rubber is tightly packed in the cases, for which purpose the great smoked balls or "hams" are

cut into pieces which will fit closely, and the packing cases are regular in shape to further promote economy in space.

Right here it may be noted that in the increased shipments there is an indication of the enormous growth in the consumption of rubber that has taken place in the past quarter century. Whereas formerly an occasional schooner brought rubber to New York, and a consignment of 50 tons was considered large, now there is a regular service of steamers, arriving with from 200 to 1000 tons of rubber aboard, the details of which are cabled ahead.

A day or two before a ship is expected, the agent to whom it is consigned goes to the New York custom house and makes a declaration of her cargo, whereupon a preliminary or conditional "paper" is issued, allowing the agent to begin to discharge the cargo without delay. Sometimes two, or even three days elapse before the final papers are issued, and by that time much if not all of the cargo has been removed from the ship, which, by the way, ties up at a wharf, contiguous to a bonded warehouse.

As soon as the ship is warped into the dock, preparations are made for unloading. Close by each hatchway is a steam winch and an imposing array of blocks, falls, and tackles, all ready for business almost before the captain goes ashore to report his arrival. A boss stevedore with several assistants and foreman and a large number of minor employes are on the dock waiting for the word to begin. They are a sturdy, business like lot of fellows. They work rapidly, skilfully, and quietly, shattering to bits any romantic ideas of them the spectator may have imbibed from novels or newspapers. With much precision and in perfect harmony they set to work and the way the cargo disappears from the ship, reappearing in neatly arranged piles on the dock, is marvelous.

When the signal to commence has been given, the donkey engine starts up, the winch revolves, and a rope with a huge hook dangling from its end descends into the ship's hold. Almost instantly it reappears, bringing with it a case of rubber which it lands on the dock. There the case is loaded on a small truck and a stevedore wheels it toward



RUBBER IN CASES ON THE DOCK.

[The long cases contain fine Pará rubber, just removed from the steamer seen beyond.]



WEIGHING RUBBER AT BROOKLYN.

[An empty package is being weighed; the rubber appears in a pile in the foreground.]

the shoreward end of the dock. The freight of each individual consignee is kept by itself, and no piece is allowed to be again handled until the entire cargo has been unloaded. All this is done under the watchful eye of employés of the steamship company, checking off, against the ship's "manifest," the packages of each shipper. When the ship is "clear" the next operation is the weighing.

The rubber cases are trucked out into a large open space between the wharf and the warehouse, and dropped into what, if it were not on private property, would be called the street. Here is set up a weighing device not unlike a huge steelyard. A case of rubber is opened and the rubber taken out and weighed. Then the case itself and everything that went to make up the package, even to the iron strap and the very last nail, are also placed on the steelyard. The rubber is then carefully repacked and the box marked with the gross, tare, and net weights.

The object of this weighing is to enable the consignee to know just how much rubber he has received, and not as a check upon the weighing done at the Brazilian ports, for it must be understood that the rubber shrinks considerably on the voyage. Some of the larger importers employ their own weighers, and there are independent weighers at hand for those who desire their services. The customs officials are not concerned about the weighing. There is no import duty on rubber, and Uncle Sam's statistics of imports of this commodity are based upon the ship's manifest.

When the box has been weighed and marked it is ready for its final disposition, so far as the importer is concerned. The steamship company is through with it, and so are the customs inspectors. If the destination of the rubber is Boston or Providence, it may be lightered to a steamboat running to one of those cities, or it may be loaded onto a freight car standing on the spur railroad track that runs through the yard. It may be loaded onto a truck and carted to the consignee's own storehouse, or it may be sent across the street to the bonded warehouse to be stored until it is wanted. If the consignee for any reason is not prepared to move his stuff, he may leave it on the dock for six days, storage being charged from the date of the actual warehousing.

Sometimes no part of a consignment is sent to the warehouse, because it was sold before it arrived, or the importer knows where it can be sent immediately to advantage. If it goes to the warehouse it must be reweighed when it is taken out, for even the best rubber is susceptible to shrinkage, and no buyer cares to pay \$1 or more per pound for more rubber than he actually gets.

All the rubber received at New York of course does not arrive by the steamers from the Amazon. Rubber is brought in nearly all the important transatlantic steamers, and in the smaller boats arriving from Central and South American ports; there are almost daily arrivals, forming a comparatively unimportant part of the cargo, which is handled from the piers of the different lines in the same way as other cargo. It comes in cases, bales, casks, bags—a most miscellaneous collection it would make if it could all be brought together. In weighing some classes of rubber the weight of the wrapping as forwarded by the shipper is accepted, and deducted from the weight of the package as it is received. The remainder is the weight of the rubber.

Last year 35 steamers arrived from Pará (most of them

having touched also at Manáos) with important cargoes of rubber. Four steamers in a single month brought an average of more than 2,000,000 pounds of rubber each, for which the consumers paid probably as many dollars, so it will be seen that the cargoes from the Amazon are of great value. There are dull seasons in this trade, however, and at times the Pará steamers carry less rubber than of other commodities. A recent arrival was a steamer with a comparatively small amount of rubber, but with 600 tons of Brazil nuts, poured loose into the hold. Pará rubber reaching New York is taken by a small number of houses, devoted especially to importing rubber. On the manifest, however, rubber frequently appears consigned to banking institutions, just as happens in the case of the import trade generally—a feature of the financing of large shipments. Likewise a rubber house may have consigned to it a cargo of nuts or skins or feathers, but this does not indicate that the house is taking on a new department of business. Merchants in the Amazon region make remittances in the form most convenient, and it may be in the form of feathers.

WHENCE THE RESIN IN RUBBER?

TO THE EDITOR OF THE INDIA RUBBER WORLD: The plantation rubber cured by the process described by me in a recent number of THE INDIA RUBBER WORLD [March 1, 1906—page 188] was found by the factory, which purchased it, to contain a large percentage of resinous matter, though not as much as rubber cured on a neighboring plantation from trees of the same age by evaporation or absorption only.

Further study leads me to believe that planters have been misled by the demand of manufacturers for a perfectly dry rubber. To dry perfectly, one must make rubber into very thin sheets, pancakes, or crêpe. Complaint is made of all these, whether they be of *Castilloa* or Pará, and the reason would seem to be resin. Whence the resin? That is a question I wish manufacturers and planters would set themselves to answer at once. It will take the planter alone years to answer, because he is not a chemist. If the manufacturer will help, it will take weeks only.

I submit for consideration my view, based on a planter's observation. Resin or the most of it seems to be due to drying and exposure. *Castilloa*, the core of a ball of the finest Pará, and the best Congo, cut thin and thrown into a drawer for a few months, became almost equally gummy any paste, a state which I assume to indicate resin. *Castilloa*, if kept long enough, will run down from the shelf, here, like tar. The white core (that is to say, the part not completely dried) of a thick piece of plantation *Castilloa* answers all the visual and tactual tests of the best Pará, while the dry skin is short and tacky, the more the older. What takes place? Is it due to oxygen, light, or bacteria? Will some one make tests of the white hermetically sealed core and the black rim of a ball of Pará, of white quen plantation *Castilloa*, and thin, sticky pancakes or sheets of the same of crêpe, of rubber milk, etc.?

If the resin does not come out of the tree, the planter will know what to do and the manufacturer will doubtless reform his method of drying by exposing for weeks or months thin sheets of mangled rubber.

GORDON WALDRON.

Bluefield's, Nicaragua, June 14, 1906.

AMAZON STEAM NAVIGATION.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The directors of the Amazon Steam Navigation Co., Limited, will recommend to the shareholders at the annual meeting to be held on the 27th inst., the payment of a final dividend of 3 per cent. (7s. 6d. per share) in respect of the second half of the year 1905, making 5 per cent. for the year.

G. STREET & CO., LIMITED.

London, June 9, 1906.

GOOD QUALITY OF CONAKRY RUBBER.

THE best rubber from French West Africa, writes the British consul general at Dakar, the rubber known as Conakry "niggers," continues to be exported in sacks bearing the customs seal as a guarantee of quality, but every other quality may be exported without it. The result of this compromise is that Conakry "niggers" have maintained their price. The application of the new regulations had a most marked effect in the Beyla district of Upper Guinea. The rubber produced there improved to such a degree that in April, 1905, it was given a special quotation on the Bordeaux market under the appellation of Beyla "niggers," and at once ranked with Conakry "niggers." Because of its backward state the new regulations are not to be introduced into the Lower Ivory Coast until 1907; but they have been introduced into the upper districts.

IMAGINARY RUBBER GATHERING.

THE INDIA RUBBER WORLD has received from Mr. John J. Voorhees an illustration of rubber gathering which he in turn received from R. F. Sears & Co. (Pará), as far back as 1894. The picture is done in colors and shows a fertile spot, presumably on the banks of the Amazon, on which are growing a number of very thrifty palm trees. On the trunks of these trees appear huge fungus like objects, presumably hams of Pará rubber, which gaudily clad natives are cutting off with hatchets. Distributed among the palms are several cactus plants of the type that in reality grow only in dry desert regions. As a freak of the imagination the whole picture is delicious, and its title "Natives gathering pure Pará rubber" wonderfully informing.

A RUBBER YARN FROM PENANG.

THE latest India-rubber lie, told me by a rubber-necked planter the other day, says a correspondent of *The Malay Mail*, is that a patent is being brought out to check the stealing of latex on estates. It is a very simple affair and simply consists of a meter attached to the tap root of the tree. This is read periodically and thus the returns from the tree are constantly checked and pilfering can be detected, for if a coolie inadvertently or maliciously lets a tap root remain running, the meter announces the fact. Are not the inventions of the modern scientist wonderful in the extreme?

SPECIMEN OF MALAY STATES NEWS.—Some 10,000 rubber trees are being tapped on the Kent estates, at the rate of about 2000 a day.—*Malay Mail*.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values of exports of manufactures of India-rubber and Gutta-percha, for May, 1906, and the first eleven months of five fiscal years, beginning July 1, from the treasury department at Washington:

MONTHS.	Belting, Packing, and Hose.	Boots and Shoes.	All other Rubber.	TOTAL.
May.....	\$ 83,305	\$ 64,978	\$ 316,031	\$ 464,314
July-April.....	1,035,705	1,360,346	2,369,480	4,765,531
Total.....	\$1,119,010	\$1,425,324	\$2,685,511	\$5,229,845
Total, 1904-1905...	892,232	1,135,610	2,327,757	4,355,599
Total, 1903-1902...	802,985	1,045,192	2,242,130	4,090,307
Total, 1902-1901...	753,236	1,006,982	2,075,925	3,836,143
Total, 1901-1900...	578,572	981,058	1,607,448	3,167,078

DUTY ON TIRE TREADS.—Certain automobile tire treads imported at New York were assessed for duty at 40 per cent. *ad valorem*, under paragraph 450 of the tariff act, relating to "vulcanized India-rubber known as hard rubber." The protest of the importer was sustained by the United States general appraisers, on the ground that the goods in question were not what is known commercially as "hard rubber," and were dutiable at 30 per cent. as manufactures of "vulcanized India-rubber," under paragraph 449.

GARDEN HOSE IN SOUTH AFRICA.—The Canadian commercial agent at Cape Town reports: "Large quantities of garden hose are imported, and the varieties most in demand are the plain rubber and armoured (wired) types, $\frac{1}{2}$ and $\frac{3}{4}$ inch, three ply in 50 foot rolls. The principal suppliers are the United States, England, and Germany."

WHERE RUBBER HEELS ARE PUT ON.

THE Boston *American Shoemaking* says: "Seeing that rubber tips have taken such hold of the public it is surprising how few samples one sees in the factories having rubber top-lifts affixed. Unquestionably thousands of pairs of shoes have rubber tips added to the heels and which to a shoe-maker have the effect of spoiling the range of the shoes when added to heels already sufficiently high according to the last shape. One can only regard this as due to retailers generally selling and attaching tips as an 'extra' to be paid for accordingly."

CHICLE is beginning to appeal to British interests, according to *Modern Mexico*, which mentions H. Plummer, of England, as attempting to secure control of Chicle producing areas in Yucatan, with a view exporting the product to Liverpool. The intended use of the material is not stated. Hitherto the principal consumption of Chicle has been in the United States, for making chewing gum, but this is an article not known to have found much favor elsewhere.

GUTTA-PERCHA tissue, such as tailors use, is now very little imported into the United States, whereas at one time almost the total consumption was supplied from abroad. It is estimated that the trade in such tissue now amounts in value to \$300,000 a year, and is supplied principally by two manufacturers.

Speaking of this tissue it is a bit remarkable but it is generally known by tailors as rubber tissue.

RUBBER PLANTING INTERESTS.

THE TOLOSA RUBBER CO

THIS company has been formed under the laws of Massachusetts to succeed to the assets of the Ubero Plantation Co. of Boston. The treasurer, Mr. W. L. Wadleigh (No. 176 Federal street, Boston), recently returned from a visit to Mexico, and a report has been issued to the shareholders, indicating that the best asset of the company is the four year old planting of *Castilloa* rubber, numbering about 120,000 trees, on 253 acres. The two year old planting has suffered from lack of attention, but 16,600 trees, on 173 acres, are considered as worth further care. The question of taking final title to 1000 acres from the Old Colony Trust Co. is now being considered. There have been issued 20,646 shares of stock, of the par value of \$10.

PROGRESS OF THE BUKIT RAJAH COMPANY.

THE second annual report of the Bukit Rajah Rubber Co., Limited, with plantations in Selangor, Federated Malay States, shows that 34,457 six and seven year old rubber trees (mostly *Hevea*) were tapped during the business year, yielding 33,203 pounds, which sold in London at an average of 5s. 5d., the total being equivalent to \$43,748.27, gold. The yield the year before was 6711 pounds, and the estimate for the second year 25,000 pounds, which, it will be seen, was largely exceeded. There was some income from coffee and coconuts, and £662 16s. 7d. from rubber seeds. A dividend of 6 per cent. was declared, the share capital issued standing at £61,000 [= \$296,856.50].

YIELD OF THE PATALING ESTATE.

AT the third annual meeting of the Pataling Rubber Estates Syndicate, Limited (London, May 17), the report stated that during the business year 25,700 pounds of rubber had been gained from about 25,000 trees, many of them tapped for the first time. These trees will now be tapped continuously. Up to the first quarter of the current year some 8000 pounds of rubber had been gathered, as against 3000 pounds in the first quarter last year. The dividends for the year amount to 20 per cent. The estate is located in Selangor.

GOVERNMENT PLANTATION IN BURMA.

EXPERIMENTAL rubber tapping in the Mergui experimental gardens, in Burma, was begun in the official year 1903-04, for the purpose of studying the best practice in dealing with *Hevea* rubber under cultivation. Several hundreds of pounds of rubber collected was sold in London at good prices. In 1904-05 like experiments were conducted, and 1460 pounds of dry rubber realized, which also was despatched to London. The planting of additional *Hevea* rubber last year was interfered with by the destruction of the seed by the canker fungus. There were added 2969 *Castilloa elastica* plants and 296 *funtumia elastica*, from seeds obtained in Trinidad.

RUBBER PLANTING INTEREST IN NICARAGUA.

THE INDIA RUBBER WORLD has seen a business letter from Nicaragua to the writer's New York correspondents, but not meant for publication, which is of interest as showing the serious attention which rubber culture is receiving in the vicinity of Bluefields. It mentions the result of tapping (though in a small way, as yet) on two plantations; the reported proceeds of sales, in the United States, of the product, on a larger scale, of another estate; and negotia-

tions for the sale of two rubber properties, not included in the above, at prices which would indicate that a rubber plantation, even not yet in full tapping, is regarded as an asset of value in that community, where the development of the trees has been a matter of common knowledge from the date of the first planting. Evidently rubber culture is getting upon a business basis there.==Mention may be made here of a method of coagulation described in the letter: "A strong lye is made from whit, called mosquito whit, 1 pint to 3 gallons of which will coagulate in less than one minute; then press into a sheet until all the black water is extracted; also soaking in water will make the rubber clearer and a dark amber color."

HIGH VALUATIONS OF RUBBER TREES.

A WRITER in *The Financial News* (London) has devoted no little care to an analysis of the published data regarding three of the best known rubber plantation companies operating in the Far East—companies "of the highest respectability and well established on the market." One result is a computation of the average value per acre planted to rubber, based upon the market valuation of the company shares of capital issued, as follows:

		Per Acre.
Anglo-Malay Rubber Co.	£230	[=\$1018 90]
Bukit Rajah Rubber Co.	117	[= 569.38]
Consolidated Malay Rubber Estates	142	[= 681 12]

There is not taken into consideration any assets which the estates may embrace, in lands or otherwise, apart from the reported acreage of planted rubber. A second table, based upon a comparison of the reported number of trees of different ages, and involving more mathematics than there is space for here, gives the present market price, so to speak, of a cultivated *Hevea* tree which has reached the age of 6 years, and is therefore capable of producing a comparatively substantial amount of rubber. The assumption is that 200 trees have been planted to the acre:

		Per Tree.
Anglo-Malay Rubber Co.	£3 10s.	[=\$17 03]
Bukit Rajah Rubber Co.	2 5s. 6d.	[=11.06]
Consolidated Malay Rubber Estates	2 17s. 6d.	[= 13.98]

The conclusion of this writer is that it would "appear a great question whether shares and prices have not now reached a level higher than is justified, and higher than is likely to be maintained."

NO DANGER OF OVERPRODUCTION.

FROM data collected by the *Chronique Coloniale* (Brussels) that paper is disposed to regard as without foundation any fear that overproduction of rubber is imminent. Without dealing with all its figures, it will be enough to quote: "Let us further suppose that the yield from natural sources remains about the same as at the present time, that is to-day 60,000 tons per annum (this is purely a gratuitous supposition, however, since experience proves that the production from the forests is continually diminishing everywhere) it is absolutely certain, having regard to the persistent increase in demand—an increase which is accentuated year by year to a point where the market actually suffers from want of supplies—that before 1912, the consumption will absorb a minimum of 80,000 to 100,000 tons. The assertion is therefore warranted that for many years to come, the entire production of rubber, no matter what pretensions it may assume, will be widely absorbed; and if the present industrial expansion continues, it is safe to assume that future supplies will not be able to satisfy the increased demand which must inevitably follow."

RUBBER INTERESTS IN EUROPE.

THE CONTINENTAL COMPANY'S EMPLOYEES' HOMES.

THE measures taken by the Continental Caoutchouc und Guttapercha Co. (Hanover, Germany) for the welfare of their employés have been referred to already in these pages, though no reference has been made to the plan of providing improved houses for their working people, the first of which were opened for occupancy on April 6, 1905, in the presence of a number of representatives of the imperial and municipal governments. The plans of the company have met with a high degree of appreciation, and the funds invested up to a recent date had amounted to \$263,000, in addition to the cost of land, comprising 31,139, square feet. There are comprised 83 apartments in the 12 buildings erected to date, the houses being of three classes, designated respectively as being for workingmen, foremen, and higher employés. The flats rent at figures varying at \$32 to \$70 per year for the workingmen, up to \$100 to \$125 for the higher employés. The amount collected for rents has been 2.1 per cent. on the invested capital. The houses are kept in repair and the taxes are paid by the company. In order to secure attractive designs for the buildings prizes were offered to the architects of Hanover. Each house has a garden, in addition to which a large playground for children has been provided. The buildings sheltered at last account 389, persons of which 217 were children. On the completion of the company's tenth year they presented to each employé in their service since the foundation a life insurance policy amounting to \$375, on which the company pay the yearly premiums as long as the employé remains with him. Those employés who were not accepted as risks by the insurance companies received a savings bank book to which the company make an annual addition. At present 233 employés are in possession of such policies or savings bank books. Each foreman on celebrating his twenty-fifth anniversary with the company receives a cash contribution and other employés after 25 years also receive sums in cash. Employés for 10 years or more have an annual vacation with pay, of two weeks a privilege enjoyed in 1905 by 345 persons.

GROWTH OF THE BERLIN-FRANKFORT WORKS.

ANOTHER factory has been acquired by the Vereinigte Berlin-Frankfurter Gummiwaren-Fabriken, making the fifth owned and operated by that company. The new accession is the long established firm of H. Schwieder, Sächsische Gummi- und Guttaperchawaren-Fabrik, at Dresden. The other factories are situated in Berlin, Gross-Lichterfelde, Geluhausen (near Frankfort a/M.), and Grottau. All told, the Berlin-Frankfort company now employ a thousand work-people, and steam engines of 1000 HP. The capital of the company has been increased to 3,500,000 marks, and, with their reserve funds, they command about \$1,000,000. All the mills are very busy, and considerable enlargement has taken place of late in the works at Lichterfeld and Grottau.

GREAT BRITAIN.

=The multifarious nature of the business of the India-Rubber, Gutta-Percha and Telegraph Works Co., Limited, is indicated by the fact that their cable steamer *Silvertown*, after recently completing the laying between Manila and Shanghai of some 1300 miles of cable made by the company for the Commercial Pacific Cable Co. (New York), on her

way home carried a cargo of 4000 tons of rice from Saigon to Holland. This great company accepts with equal readiness orders for ocean cables, bicycle tires, and golf balls, and has for its various purposes a greatly varied equipment, but had not been mentioned before in the general carrying trade.

=The London *Daily Telegraph* says that at the annual meeting in Leeds of the Electrical Contractors' Association of the United Kingdom, which now numbers 250 members, Mr. E. L. Berry (late chairman of the London section) said an agreement had been made by the Cablemakers' Association with the main idea of inducing the members of the Electrical Contractors' Association to use English made cables pure and simple.

=A recently published account of a single British golf ball factory, licensed under the Haskell patents, reports its production at 900 to 1000 dozen balls a day. It has been said that the making of golf balls is as the making of mustard. The latter pays not on account of the quantity used but on account of the quantity wasted. So with golf balls—the lost ones count! Two tons of paint is the annual consumption in the golf ball factory referred to, and over 3,000,000 tissue wrappers are used.

=Macintosh Tyre Co., Limited, has been registered, at Lower Cambridgeport street, Manchester, with £7500 [= \$00,000] capital, to carry on the business of factors and repairers of motor tires. M. Adler is managing director; Charles Macintosh & Co., Limited, the rubber manufacturers hold shares in the company entitling them to nominate two directors.

=Mr. William Firth, who for nearly half a century was secretary of the North British Rubber Co., Limited, and whose death was recorded in our last issue, is mentioned by the *India-Rubber Journal* as having been president of the Astronomical Institution of Edinburgh. Although an extremely busy man in connection with the rubber works, he had long given attention to astronomical observations, and continued his scientific reading as well as his attendance upon the society meetings up to the commencement of his final illness.

FRANCE.

A NEW rubber manufacturing company is the Société Parisienne du Caoutchouc Industriel, at No. 85, quai de Javel, Paris, of which the managing director is William Hausser, formerly with the Société Industriel des Telephones.

THE first annual Federated Malay States dinner in London was attended recently by a number of gentlemen interested in mining, planting, and other interests in the States, most of whom were or had been residents of the English settlements there. The dinner was attended by Sir John Anderson, K. C. M. G., governor of the Straits Settlements, Sir Frank Swettenham, K. C. M. G., his predecessor in office, and a number of other persons of prominence in public life. Frequent references were made to rubber in the after dinner speeches, including one by Mr. E. V. Carey, widely known as a rubber estates manager. Several other rubber planters were present.

A CORRESPONDENT of *The Malay Mail* notes the arrival at Penang of Mr. John I. Philips, from Australia, with a commission to buy rubber for the Dunlop Rubber Co.'s factory at Melbourne. The writer hears that that factory uses three tons of rubber per week in the manufacture of boot heels alone.

NEWS OF THE AMERICAN RUBBER TRADE.

UNITED STATES RUBBER CO. DIVIDENDS.

THE directors of the United States Rubber Co., at a regular meeting on July 5, at the general offices in New York, declared the usual quarterly dividend of 2 per cent. on all the shares outstanding of the First preferred stock of the company, and a dividend of $1\frac{1}{4}$ per cent. on the Second preferred stock, for the quarter beginning April 1, 1906, from the net earnings of the company, payable July 31 to stockholders of record July 14. A statement issued from the offices of the company says: "The net earnings for the three months (June partially estimated) are approximately \$972,000, not including earnings of the Rubber Goods Manufacturing Co., excepting dividends amounting to \$116,277.53 received upon preferred stock of said company in this company's treasury. The net earnings for the corresponding period last year \$966,751.

SEWARD RUBBER CO.'S FACTORY.

THE illustration on this page gives a good view of the main building of the Seward Rubber Co., recently organized to make mechanical rubber goods. The factory is located at Berlin Junction (near Hartford), Connecticut. It is of



brick, 160 x 70 feet, and the principal portion three stories. The boiler house and machine shop are separate and not shown in the picture. The company own plenty of land for future extension, and own also a railway siding.

THE DERBY RUBBER CO.

THE Shelton mills of this company are now in full operation, with a daily capacity of about 15 tons of reclaimed rubber. They are manufacturing the standard and special grades of reclaimed stock. Their Factory No. 2 has recently been equipped with the most modern machinery, and it is said by some of the trade that they are making the highest grades of reclaimed stock ever produced. Mr. W. F. Askam, who has for the past 25 years devoted his time to the manufacture of reclaimed rubber, is now the vice president and general manager of The Derby Rubber Co.

RUBBER RECLAIMING LITIGATION SETTLED.

TO THE EDITOR OF THE INDIA RUBBER WORLD: We have the pleasure to advise you that the recent litigation concerning rubber reclaiming patents brought against this company by Mr. Mitchell, of the Philadelphia Rubber Works, and Mr.

Loewenthal, of the U. S. Rubber Reclaiming Works, and which the trade journals, some months ago, called attention to, has now been definitely settled and withdrawn; the following order of court having been entered on June 14, 1906:

Before Holland, Judge. Upon the annexed consent of the solicitors for the respective parties, it is hereby ordered that this cause be, and the same hereby is discontinued, without cost to either party as against the other.

Will you kindly give this a properly prominent notice in an early number and very much oblige,

Yours very truly, THE S. & L. RUBBER CO.,
JAMES M. STOTESBURY President.

Chester, Pennsylvania July 5 1906

[THE nature of this suit was reported in THE INDIA RUBBER WORLD, January 1, 1906—page 131.]

BOSTON RUBBER SHOE CO.

THE report of condition filed by the Boston Rubber Shoe Co., as of March 31, 1906, with the Massachusetts authorities, in compliance with the state law, embodies the following details:

	ASSETS.	
	March 31, 1906	March 31, 1905.
Real Estate.....	\$ 768,525	\$ 768,525
Machinery.....	375,515	375,515
Merchandise and stock in process..	3,540,003	4,454,340
Cash and debts receivable.....	2,041,384	2,020,197
* Special contract U. S. Rubber Co..	4,800,000	4,800,000
Miscellaneous.....	16,620	16,620
Total.....	\$11,542,047	\$12,435,197
	LIABILITIES	
	March 31, 1906	March 31, 1905.
Capital stock.....	\$ 5,000,000	\$ 5,000,000
Accounts payable.....	428,114	948,464
Funded debt.....	4,800,000	4,800,000
Floating debt.....	.....	400,000
Accrued interest on bonds not due..	40,000	40,000
Profit and loss.....	1,273,933	1,246,733
Total.....	\$11,542,047	\$12,435,197

* To pay principal and interest of Debenture Bonds of Boston Rubber Shoe Company as they may mature or be drawn.

TRADE NEWS NOTES.

THE Firestone Tire and Rubber Co. (Akron, Ohio), it is reported, have leased for a term of years, for use for their Chicago branch, a two story building 25 x 171 feet.

=The Canadian Rubber Co. of Montreal, Limited, have just concluded a deal whereby they obtain exclusive control of Rubber advertising in all street cars owned and operated in the principal towns and cities in Canada. They are at present running their attractive cards in street cars, advertising their "Keystone" side wire tire, and calling attention to their facilities for manufacturing tires for any class of work.

=The Falcon Rubber Co. (New Haven, Connecticut) is to be liquidated. This company was incorporated February 29, 1904, with \$60,000 capital, to manufacture rubber sundries, but has not been operating for several months. Sherman F. Foote has been appointed permanent receiver in the suit of Fred A. Warner, owner of 50 shares, and others.

=The strike of the Boston Insulator and Abestos Workers' Union for an advance of 50 cents per day, inaugurated on May 1, has been declared off. The settlement was regarded as a compromise.

=Notices have been posted in the two factories of the Boston Rubber Shoe Co. that the summer shutdown will begin on August 3 and continue for two weeks.

=Phoenix Rubber Co. is the name of a new concern in San Francisco—No. 103 Béale street—handling mechanical rubber goods. They are also Pacific Coast distributors for the Chicago Belting Co.'s leather belts. J. D. Ralph is manager.

=Additions made recently to the plant of A. Adamson (Akron, Ohio) have doubled its capacity for turning out molds and cores for automobile tires.

=The Bishop Gutta-Percha Co. have filed plans in the New York building department for an additional factory, five stories, at Nos. 428-430 East Twenty-fifth street, to cost \$57,000.

=The Marion Rubber Co., jobbers of rubber foot wear with stores at Columbus, Ohio, and Marion, Indiana, is composed of G. P. and A. P. Butterworth and H. W. Lushey, who have formed a separate corporation for manufacturing leather shoes at Marion.

=The California Waterproof Manufacturing Co., whose plant, established in San Francisco in November last, was burned on April 18, have become reestablished at Berkeley, California.

=John E. Hundley, of Colorado Springs, Colorado, has brought suit to recover \$2500, paid several months ago for stock in the American Crude Rubber Co., on the condition he alleges, that the seller would take back the stock at the same price whenever desired to do so by the plaintiff. Hundley now asserts that he cannot sell the stock at any price. The company is one of those formed to exploit the so called Colorado rubber weed.

=One of the most notable new buildings in Boston is the Christian Science temple, erected at a cost of \$2,000,000. The covering of the auditorium and other floors is "Interlocking" rubber tiling, supplied by the New York Belting and Packing Co., Limited, and laid by the Stoughton Rubber Co. It was designed in special colors, selected for the purpose of harmonizing and blending with the general scheme of decoration of the interior.

=Mr. George W. Speaight, (New York), manufacturer of chemicals for the rubber trade, sailed on the steamer *Amerika*, on July 5, for an extended tour of Great Britain and the Continent.

=The many friends of Mr. A. M. Stickney, president of the Wellman Sole Cutting Machine Co. (Medford, Massachusetts), will be pleased to learn that he is recovering from his recent illness. Recently he has been staying at his cottage in Epping, New Hampshire, where he is gaining strength through change of air.

=Mr. Lester Leland, second vice president of the United States Rubber Co., accompanied by Mrs. Leland, arrived from Europe at his home in Boston on June 4.

=George R. Bidwell, who will be remembered for his prominent connection with the pneumatic tire trade in the palmy days of cycling, and who later was collector of the port of New York, has become general manager of the Auto-car Co., whose factory is at Ardmore, Pennsylvania.

=Suit has been filed by the Buffalo Specialty Manufacturing Co. against the Alling Rubber Co. (Hartford, Connecticut), alleging infringement of a patent on a tire repairing compound called "Neverleak."

=A complete rubber drying equipment consisting of fan and distributing system, is to be installed for the Raymond Rubber Co. (Titusville, New Jersey), by B. F. Sturtevant Co., of Boston. This is to replace an outfit destroyed by fire in April last and marks the completion of all that part of the company's plant that was burned.

=The two factories of the Woonsocket Rubber Co. will be closed between August 10 and August 23, for the annual summer vacation.

=The portrait herewith is that of Mr. Fleetwood H. Ward, who was recently elected secretary and treasurer of the Canadian Rubber Co. of Montreal, Limited.

=The International Rubber Co., a new corporation, with offices at No. 895 Boylston street, Boston, will handle exclusively the tire products of the International A. and V. Tire Co. (Milltown, New Jersey). Mr. L. H. Fiske is general manager.

=Legal proceedings have been instituted at Akron, Ohio, to have set aside the sale of the Lilly Rubber Manufacturing Co. to the Phoenix Rubber Co., on the ground that the same was without due consideration of the rights of certain creditors of the first named concern.

=Letters patent have been granted by the secretary of state of Canada, dated June 29, 1906, for the incorporation of Ames-Holden, Limited, with \$2,500,000 capital, to manufacture leather and rubber footwear of every description. Incorporators: James Redmond, Herbert B. Ames, Arthur R. Holden, Rufus C. Holden, and William A. Matley. The chief place of business is to be in Montreal, Quebec.

=Morgan & Wright (Chicago,) rubber manufacturers, appeared before the municipal board of review on July 16 and asked for an increase of \$136,000 in the assessment on their property—from \$200,000 to \$336,506. It is reported that their request was granted without delay.

=The Aiton Machine Co. (New York) are putting on the market a high speed 12 spool strander, that is designed to operate at 1000 revolutions per minute, and is intended for use in the manufacture of hollow clothes line, and other light stranding work, where high speed and large output are demanded. The first machine is going to the Malin Co., of Cleveland, Ohio, who it is understood have placed orders with the Aiton Machine Co. for several more of these machines.

=The Ohio Rubber Culture Co. (Canton, Ohio) have recently completed this year's rubber planting and now have over 1,000,000 rubber trees growing on their plantation "Capoacan;" 800,000 of these trees are of last year's planting and are now over six feet high. The Minatitlan Contracting Co., who have charge of the development work for this company, have rendered a most satisfactory report; in it they speak of the excellent condition of the property, as well as the rapid growth and healthy condition of the trees.



MR. F. H. WARD.

=The Prescott Brothers Rubber Store, No. 159 Summer street, Boston, have announced the opening of a new department, to be devoted to all kinds of waterproof clothing—cravenette raincoats, automobile clothing, oil yachting clothing and rubber clothing. They say: "Our aim is to have a 'rubber store' worthy of the name, stocked with the best goods the rubber world produces."

=Tire selling agencies throughout the countries, representing the companies which for three years past have maintained an agreement as to output and prices, have been receiving notices of the termination of such agreement, as forecasted in the July, issue of THE INDIA RUBBER WORLD.

=The Hartford Rubber Works Co. annual meeting was held at Hartford on July 17. The directors chosen then elected officers on July 19. V. B. Lang, of Detroit, succeeds Ernest Hopkinson as one of the vice presidents, of the company.

PROFITS OF THE AMERICAN CHICLE CO.

At the annual meeting in Jersey City, New Jersey, on July 17, of the stockholders of the American Chicle Co., a statement was submitted showing that the profits for the fiscal year ended June 30, 1906, were \$1,404,000, an increase of \$200,000 over last year. After paying a dividend of 6 per cent. on the preferred stock, amounting to \$180,000, and 13 per cent., equal to \$780,000, on the common stock—1 per cent. extra was paid July 17 in addition to the regular monthly dividend of 1 per cent.—the surplus for the year was \$440,000. During the fiscal year the company's large plant at Toronto was completed. Their San Francisco factory having been destroyed by the fire, a new one to take its place is being erected at Portland, Oregon. They own factories also at Newark, Cleveland, New Orleans, Louisville, Chicago, and London (England). A considerable extension of the European business was reported. The company's holdings of Chicle producing lands in Mexico have increased to 2,600,000 acres. In connection with their business the company have developed some important colonization in Yucatan and Campeche. The board elected for the new year consists of Thomas Adams, E. E. Beeman, W. J. White, R. F. Tully, G. A. Stanton, George H. Worthington, J. P. Primley, T. L. Jefferson, John D. Adams, Stephen T. Britten, Henry Rowley, and J. C. Parrish.

"RUBBER-ITE" STITCHED CANVAS BELT.

A NEW article of machinery belting is called the Rubber-It belt. It is described as a stitched canvas belt, treated with Rubber-ite, a fluid made from mineral rubber. The latter product being insoluble in acids or alkalis, its use in liquid form was unknown until Mr. F. B. McIlroy discovered the present method of treating it, and the new belting is the result. It is waterproof, will run through oils and alkalis, has notable adhesive qualities, and little stretch. Made by The McIlroy Belting and Hose Co., Nos. 19-21 South Canal street, Chicago.

ELECTRIC RUBBER MANUFACTURING CO.

At the first annual meeting of the stockholders of this company held on July 11, at Rutherford, New Jersey, the following officers and directors were elected: James H. George, president; S. F. Robinson, vice president; William J. Conkling, treasurer; Charles H. George, secretary; Charles Reynolds, S. D. Sherwood, and Henry A. Middleton, additional directors. The company paid the second semi annual dividend of 3½ per cent. on July 1.

A MERGER IN WHICH THERE IS NO WATER.

THE Canadian Consolidated Rubber Co., Limited, with headquarters at Montreal and an authorized capital of \$5,000,000, were granted letters patent under the Canadian law, on July 7, to carry on the business of manufacturing and dealing in rubber goods. THE INDIA RUBBER WORLD is advised: "The Canadian Consolidated Rubber Co., Limited, has been organized as a holding company, to control both the Canadian Rubber Co. of Montreal, Limited, and the Granby Rubber Co., Limited, of Granby. The two last companies will continue doing business separately, as before, except that they will more or less be under one management, and will be controlled absolutely by the one interest, viz: The Canadian Consolidated Rubber Co. The interests identified with the Canadian Rubber Co., of Montreal, Limited, hold the controlling interest in the new corporation."

NEW YORK STOCK EXCHANGE TRANSACTIONS.

UNITED States Rubber Co. :

DATES	Common.			Preferred.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending June 23	2,820	49¾	48¾	100	108½	108
Week ending June 30	16,010	49¾	44½	700	108	107
Week ending July 7	6,500	45¼	43½	900	108½	106½
Week ending July 14	9,800	45	38	1,480	108½	104¾
Week ending July 21	6,450	42	39¾	1,000	107½	105½

SECOND PREFERRED.

Week ending—June 23.	June 30.	July 7.	July 14.	July 21.
Sales..... 100	130	500	610	25
High..... 78¼	79	79	79¾	78
Low..... 78¼	77½	77¼	77¼	78

NEW INCORPORATIONS.

THE B. & R. Rubber Co. July 11, 1906, under Massachusetts laws, to manufacture rubber goods; authorized capital, \$360,000—\$120,000 in 7 per cent. cumulative preferred shares and \$240,000 common. Thomas G. Richards, president; Charles C. Beebe, treasurer; George R. Hamant, Alvin E. Sortwell, and James A. Gass, additional directors. This company has acquired the plant of the North Brookfield Industrial Co., which is now being remodelled for use as a rubber factory. The plant purchased by the company is well adapted for their purpose, which is the manufacture of molded rubber specialties, insulating tape, fruit jar rings, carriage mats, etc. The company was organized by Messrs. Richards and Beebe and is to be managed by them. It is understood that the stock which they offered for sale was speedily oversubscribed.

=The Brazilian Rubber Plantation and Development Co., July 6, 1906, under New York laws; capital, \$100,000. Incorporators: Adolph Hirsch, Seymour E. Heymann, and Henry A. Bloomberg, New York city; G. Henry Hirsch, Bahia, Brazil. The Mr. Hirsch first named, and who is president of the new corporation, is the head of Adolph Hirsch & Co., commission merchants. "The object of the company is to plant maniocaba rubber on the grounds belonging to the same in Brazil, with the object of producing maniocaba superior to that which has hitherto appeared on the market."

=The Wolverine Rubber Manufacturing Co., June 26, 1906, under Michigan laws; capital authorized, \$12,500. Incorporators: George B. Goble, Detroit, Michigan; David Craig, Wyandotte, Mich.; Oliver H. Joy, Akron, Ohio.

PERSONAL MENTION.

MR. FREDERICK C. HOOD, treasurer of the Hood Rubber Co., and a member of the Harvard class of '86, was chairman of the committee on arrangements for the reunion of his class in Boston recently.

=The friends of Mr. R. P. Towner, junior member of Towner & Co., rubber goods jobbers, of Memphis, Tennessee, have received cards reading: "Richard Paul Towner and Edna B. Holbig announce their marriage in New York city, June 17, 1906. At home after August 1, Memphis, Tennessee."

=The many friends and business associates of Mr. Charles H. Norton, advertising manager for George Borgfeldt & Co. (New York) are congratulating him on the announcement of his engagement to Miss Adele Eddy Black of New York city.

THE TEXTILE GOODS MARKET.

THERE is very little of interest that can be said about the cotton situation at this writing as there has been no appreciable change since our last report. The persistent rains have had a more or less adverse effect on the crop, which has also been retarded by labor conditions, which in certain sections of the South are very unsatisfactory. Certain rumors from Texas indicate a relatively early movement of the crop of that state. This theory, however, is not in accord with the views of the president of a large Southern mill and one of the best authorities on the cotton situation, who in writing prominent New York factors says: "In our mind cotton is a purchase now for 4 months. Crop will not be large and will be sold slowly."

The rubber trade demand is as active as ever and a number of manufacturers of mechanical goods have exceeded the proportion due them on contracts. The speculative market is active though in a rather chaotic condition. The general opinion, at least that which prevails in reasonably conservative circles, indicates a rather late and slow moving crop, though on the other hand there is a considerable element who predict a relatively early movement and quick sale.

RUBBER NOTES FROM TRENTON.

BY A RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The plant of the Perfection Rubber Co., on Paul avenue, Trenton, narrowly escaped destruction by fire on July 14. At 6.45 P. M. an alarm was turned in, which brought the fire department on a run—and for a time things looked very serious. The building is a two story frame structure with boiler room adjoining. The fire started in the boiler room and the roof of this building was almost destroyed. The firemen got quickly to work and while two companies devoted themselves entirely to the blazing building the energies of the others were directed toward saving the other buildings, in which efforts they were successful. The engineer of the plant says he cannot account for the fire. The loss is placed at \$1200. The officers of the Perfection Rubber Co. are John W. Cook, president; J. M. Lawshe, secretary and treasurer.

Permits have been granted to the Crescent Belting and Packing Co. for the erection of two new buildings each to cost \$5000. The buildings will be of brick, one of three stories and one of one story.

General C. Edward Murray, of the Empire Rubber Manufacturing Co., during two weeks in July left the cares of rubber manufacturing, and devoted himself to his duties as Quartermaster General at Camp Edward C. Stokes, at Sea Girt.

Work has been resumed at the Lambertville Rubber Co. after an extended shut down, during which extensive repairs were made and a new set of calenders put in.

The members of the fire brigade of the United and Globe Rubber Manufacturing Co.'s, left the factory on Saturday, July 21, for a day's outing up the Delaware river. A camp site was selected near Scudder's Falls, where an enjoyable day was spent.

A baseball team of employees of the United and Globe Rubber Manufacturing Co.'s on July 14, played an interesting game with a team from the Union Boiler Co., at Pennington, N. J. The latter won by a score of 10 to 7.

OBITUARY.

IN the death of JOSEPH STOKES, the nineteen year old son of Joseph O. Stokes, of the Trenton Rubber Manufacturing Co., the Home Rubber Co., and the Joseph Stokes Rubber Co., the trade suffers a distinct prospective loss. The young man showed wonderful promise both in character and sound business judgment, and was fitting himself to become the head of the rubber company that bears his grandfather's name. That so bright a future cannot fulfill its promise is exceedingly sad, and his parents, relatives, and friends are assured of the deepest sympathy of the trade.

* * *

CHARLES C. MILLER, for many years connected prominently with the Westinghouse Air Brake Co., at Pittsburgh, and later secretary of the Peerless Rubber Manufacturing Co. (New York), died on July 17 at his home in Bath avenue, Long Branch, N. J., of progressive paralysis, in his sixty-fifth year. He was born in Pittsburgh in 1851. Becoming interested in the rubber business he became a resident of New York. When the company with which he was connected was acquired by the Rubber Goods Manufacturing Co. he retired from business, and about two years ago he moved to Long Branch. He is survived by one brother and five sisters. The brother is Orlando Miller, purchasing agent for the Westinghouse concern at Pittsburgh. Funeral services were held at Long Branch on July 20.

FERDINAND G. BORGES, one of the principals behind the various "Ubero" rubber plantation companies, whose conviction on charges of conspiracy and larceny in connection with their promotion, in the criminal section of the superior court at Boston was reported in the last INDIA RUBBER WORLD, was called before Judge White for sentence on July 5. The prisoner made a lengthy statement in court, throwing the blame for any wrongdoing upon the organizer of the companies—Ex-Congressman William D. Owen, who escaped prosecution by leaving the country—and exonerating the other officers of the company. Borges was sentenced to serve for from 12 to 15 years in the Massachusetts state prison, and began his sentence on July 6.

The reorganization of the Ubero Company as the Tolosa Rubber Co. is reported in another column.

THE RUBBER TRADE IN AKRON.

BY A RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: For the first time in many years the Akron rubber factories are working full force during the summer months in order to turn out the large number of orders that are on hand and are coming in. Especially is this true in the tire branch. All of the tire manufacturers report an active trade and during the past month more than 20 carloads of tires have been shipped out of Akron to various points. The rubber specialty manufacturers and druggists' sundries manufacturers also report a good trade. The chief trouble at all the factories is the lack of the requisite amount of experienced help.

A genuine building boom that is now on in Akron is indicative of the remarkable growth of the local rubber industries. The majority of the plants are constructing additions to care for the increased trade which has been manifest this year. The Diamond Rubber Co. have let a contract for a large building to be erected on the property recently acquired by it on Jackson street adjoining their present plant. The building will be one story, but later as the demand for room increases additional stories will be added. The building will be 288x150 feet.

The B. F. Goodrich Co. are erecting a five story building on South Main street, between two of their other buildings. This building when completed will be used exclusively for the company's growing tire business. Steel girders and wire netting are being used throughout. This frame work will be encased by solid walls of concrete. The tire manufacture requires extra heavy machinery and to support the new equipment an extra strong building is needed. The engineering and construction corps of the company spent many weeks in examining factory buildings all over the country and at last decided upon this method of construction. When completed the building will be the most substantial in the city, if not in the state, and as nearly fireproof as possible.

Property owners have remonstrated against the permanent vacation of Fourth street for the benefit of the Buckeye Rubber Co., who desire a portion of the street for the purpose of branching out. The company made application to the council for the use of a portion of the street and asked that that portion required be vacated. The property owners are willing that the council grant the company the right to use the street, but not vacate it. The Buckeye Rubber Co. are contemplating several changes in their plant.

Large shipments have been made during the month by the Biggs Boiler Co., of Akron, of vulcanizers and devulcanizers which the company manufacture. The shipments have been made mostly to Eastern mills.

A partnership under the name of Arenson & Squires has been formed in Akron to deal in scrap rubber. The partners are Edward Arenson and M. Squires. They will open a warehouse at No. 80 East Exchange street.

The officers of the Panama Crude Rubber Co., which was organized in Akron several months ago, are actively engaged in arranging plans for the operation of the company this fall. The company are securing a large acreage of land in Central America where they expect to cultivate rubber trees. The plans are still premature and the officers of the company are not prepared to divulge their plans at this time. The company have a paid up capital stock of \$300,000.

The will of the late Richard P. Marvin, secretary of The B. F. Goodrich Co., has been filed for probate. It shows that the estate was approximately \$150,000. The distribution is to be made as follows: Grace T. Marvin, the widow, \$100,000 and the homestead and about 6 acres of land in Akron; Mary M. Goodrich, a sister, \$5000; Sarah Jane Hall, a sister, \$5000; Robert N. Marvin, a brother, \$5000; Charles C. Goodrich, a nephew, \$5000; Isabella Goodrich Breckinridge, a niece, \$5000; Kate P. Marvin, \$3000; Isabella Marvin Sheldon, Maud Marvin Patterson, Joseph Cabell Breckinridge, Marvin Cook Wilson, Julia Sheldon, and Alfred Lohman each \$1000; Anna B. Perkins, \$2000 and Carl Lohman \$3000. The residue of the estate is to go to the widow, who with Charles C. Goodrich are named in the will as executors.

A. F. Libis, one of the department managers of The B. F. Goodrich Co., has returned from San Francisco where he has been in the interest of the company. Mr. Libis states that the Goodrich company will soon be located in San Francisco again and that at present the company is enjoying as brisk a trade as though the city had never been devastated.

While Akron furnishes a large per cent. of the automobile tires used throughout the country, this city is to have its first automobile manufactory. An organization of the Williams Motor Car Co. was effected July 17 by the election of the following officers: President, J. F. Townsend; vice president and general manager, H. A. Williams; treasurer, Henry Robinson; secretary, L. D. Slusser. The company has been incorporated under the laws of South Dakota with a capital stock of \$5,000,000 and will manufacture automobiles under the Williams patent. G. Frank Fries, of Buffalo, New York, an expert in the automobile trade has been engaged as superintendent of manufacturing. The Williams machine will be different from all other automobiles in several features. They are to have steel rims with solid rubber tires, making an artillery wheel; also air brakes. Two leading characteristics are the three point suspension principle and the centrally driven power.

Mr. William B. Miller, secretary of the Diamond Rubber Co., is in San Francisco, where he will remain for several weeks looking after the company's interests. Mr. Miller while in the West will adjust the losses of the company by reason of the great fire. He will also procure a new site for the location of the branch plant that the company operate in the West.

A scrap rubber warehouse is to be established in Akron by L. Albert & Son, of Trenton, New Jersey. This firm has a special agent in this city and the business has grown to such extent that a warehouse is quite essential.

Rubber Scrap Prices.

New York quotations—prices paid by consumers for carload lots in cents per pound—are slightly higher:

Old Rubber Boots and Shoes	Domestic.....	8½	@ 8½
Do	— Foreign.....	7½	@ 7½
Pneumatic Bicycle Tires.....		7½	@ 7½
Solid Rubber Wagon and Carriage Tires.....		8½	@ 8½
White Trimmed Rubber.....		10½	@ 11
Heavy Black Rubber.....		5½	@ 5½
Air Brake Hose.....		3½	@ 3½
Fire and Large Hose.....		2½	@ 3
Garden Hose.....		2½	@ 2½
Matting.....		1½	@ 1½

REVIEW OF THE CRUDE RUBBER MARKET.

THE condition of the New York market during the month has been one of quiet. There have been days when no trading was reported, and when rubber has changed hands it has been, as a rule, in small parcels, though the aggregate of such sales has been considerable. Following the holiday, July 4, and the midsummer stocktaking period in many factories, the hope was entertained in the crude rubber trade that buyers would begin to show more interest, and that the resumption of buying on a more liberal scale would stimulate prices. Such did not prove the case, however, until within the closing days of the month, when prices indicated a firmer tendency in the market, and recovery from a decline which occurred about the middle of the month. Similar conditions have existed in the European markets. The late improvement on this side did not develop until after the receipt of reports of a better market tone in London and Liverpool.

In addition to the arrivals from Pará noted in detail on another page is to be mentioned the *Cametense*, at New York, on July 24, with 583,400 pounds of rubber and 128,600 pounds of Caucho. The *Benedict* is due on August 3, with 200 tons Rubber.

Manãos exports (including Caucho) for the first six months of 1906 were 10,347,406 kilos; for the crop year ended June 30 exports were 17,699,178 kilos. Receipts at Manãos for several past crop years has been:

	1902-03.	1903-04.	1904-05.	1905-06.
For Manãos.....tons	18,159	18,133	16,819	18,209
For Pará.....	939	1,791	5,267	5,440
Total.....	19,098	19,924	22,086	23,649

Following is a statement of prices of Pará grades, one year ago, one month ago, and on July 27—this date:

PARÁ.	August 1, '05.	July 1, '06.	July 27.
Islands, fine, new.....	125@126	118@119	118@119
Islands, fine, old.....	none here	none here	none here
Upriver, fine, new.....	127@128	123@124	123@124
Upriver, fine, old.....	129@130	124@125	124@125
Islands, coarse, new.....	67@68	64½@65	64½@65
Islands, coarse, old.....	none here	none here	none here
Upriver, coarse, new.....	90@91	90@91	90@91
Upriver, coarse, old.....	none here	none here	none here
Caucho (Peruvian) sheet....	70@71	72@73	72@73
Caucho (Peruvian) ball.....	80@81	85@86	86@87
Ceylon (Plantation) fine sheet.....		148@149	148@149

AFRICAN.	CENTRALS.
Sierra Leone, 1st qual. 102 @103	Esmeralda, sausage. . . 86@87
Massai, red.....102 @103	Guayaquil, strip.....71@72
Benguella.....76 @77	Nicaragua, scrap.....83@84
Cameroon ball.....75 @76	Panama, slab.....61@62
Accra flake.....21½@22	Mexican, scrap.....84@85
Lopori ball, prime...114 @115	Mexican, slab.....59@60
Lopori strip, prime..103 @104	Mangabeira, sheet....67@68
Madagascar, pinky..93 @94	Guayule.....39@45
Ikelemba.....115 @116	EAST INDIAN.
Soudan niggers.....95 @96	Assam.....92@93
Late Pará cables quote:	Borneo.....41@47

Per Kilo	Per Kilo
Islands, fine.....5½350	Upriver, fine....6½300
Islands, coarse.....2½450	Upriver, coarse.4½200
Exchange, 16½d.	latest advice.

Last Manãos advices:

Upriver, fine.....6½250	Upriver, coarse.....3½750
Exchange, 16½d.	

NEW YORK RUBBER PRICES FOR JUNE (NEW RUBBER).

	1906.	1905.	1904.
Upriver, fine.....	1.23 @ 1.25	1.30 @ 1.35	1.11 @ 1.14
Upriver coarse.....	.90 @ .92	.94 @ .97	.87 @ .90
Islands, fine.....	1.19 @ 1.22	1.28 @ 1.33	1.08 @ 1.11
Islands coarse.....	.65 @ .66	.72 @ .76	.64 @ .68
Cametá.....	.70 @ .72	.74 @ .80	.64 @ .68

Statistics of Para Rubber (Excluding Caucho).

	Fine and Medium.	Coarse.	Total.	Total.	Total.
			1906.	1905.	1904.
Stocks, May 31.....tons	250	37	287	578	327
Arrivals, June.....	338	200	538	490	252
Aggregating.....	588	237	825	1068	579
Deliveries, June.....	417	217	634	474	442
Stocks, June 30.....	171	20	191	594	137

	PARÁ.	ENGLAND.
	1906. 1905. 1904.	1906. 1905. 1904.
Stocks, May 31.....tons	90 365 195	1060 370 440
Arrivals, June.....	1485 985 1035	345 760 720
Aggregating.....	1575 1350 1230	1405 1130 1160
Deliveries, June.....	1545 1190 1055	500 645 575
Stocks, June 30.....	30 160 175	905 485 585
World's visible supply, June 30.....tons	2150	1790 1506
Pará receipts, July 1 to June 30.....	29,069	27,311 25,925
Pará Receipts of Caucho, same dates.....	5620	5474 4669
Afloat from Pará to United States, June 30..	659	96 98
Afloat from Pará to Europe, June 30.....	365	455 511

The Para Crop Year.

THE total arrivals at Pará (including Caucho) for the year ended June 30, in the absence of official figures at the date of this arrival may be stated at 34,500 tons.

Total arrivals, 1904-05.....	33,060 "
Total arrivals, 1903-04.....	30,580 "
Total arrivals, 1902-03.....	29,850 "
Total arrivals, 1901-02.....	30,000 "

ANALYSIS OF THE NEW RUBBER CROP FIGURES BY AN AMERICAN IMPORTING HOUSE.

	Per Cent
Increase of rubber crop.....	5.24
Increase of Caucho crop.....	2.66
Total deliveries in the world of Pará rubber increased .	4.88
American deliveries increased.....	12.62
English deliveries increased.....	8.52
Havre and Continental deliveries increased.....	55.77

World's stock, July 1, 1906.....	2150 tons.
World's stock, July 1, 1905.....	1790 "
European shipments Pará rubber to America.....	662 "
Same for preceding year.....	910 "

Receipts at Pará, 1905-06:

Rubber.....	29,065 tons.
Caucho.....	5,620 "
Total.....	34,685 "

American deliveries.....	12,778 tons.
English deliveries.....	8,888 "
Havre and Continental deliveries and shrinkage.....	7,039 "

Antwerp.

TO THE EDITOR OF THE INDIA RUBBER WORLD: At the sale of June 26, the transaction comprised the following quantities:

	Exposed.	Sold.
Congo sorts.....	312	283
Other sorts.....	103	39
Total.....	415	322

Buyers being reluctant, only part of the exposed quantity could be disposed of. Prices were weak, especially for inferior grades. The average decline comes out at 35 to 40 centimes, or about 3½ to 4 per cent. below valuations—i. e., on the May sale.

The next large sale will be held on July 27, when 443 tons will be exposed; the usual Congo sorts—Uelé Aruwimi, Upper Congo ball, Equateur, Maringa, Kasai, and Djuma—will be represented with large lots. Sales since 1 June till end of June at 400 tons. Stock at 620 tons, besides 296 tons arrived by steamer *Bruxellesville* from the Congo.

G. SCHMID & CO., SUCCESEURS.

Antwerp, July 11, 1906.

THE lot of 5½ tons of Guayule rubber offered at the Antwerp auction on June 26 failed to meet with a sale. The estimate of value, according to the official catalogue, was 7.25 francs per kilogram = 63½ cents per pound, and the rubber was "bought in" by the owners at 6 50 francs. Its sale was reported subsequently—on July 6—at 4.25 francs [= 37½ cents per pound].

ANTWERP RUBBER STATISTICS FOR MAY.

DETAILS.	1906.	1905.	1904.	1903.	1902.
Stocks, Apr. 30. <i>kilos</i>	880,458	635,875	441,621	488,799	500,664
Arrivals in May.....	656,759	287,333	737,526	352,833	537,536
Congo sorts.....	836,944	244,751	685,086	322,725	489,902
Other sorts.....	120,195	72,582	52,446	38,168	47,634
Aggregating.....	1,537,217	923,208	1,179,147	841,632	1,038,200
Sales in May.....	811,966	576,104	436,932	499,040	573,525
Stocks, May 31.....	725,251	347,104	742,215	342,592	464,675
Arrivals since Jan. 1	2,728,448	2,220,288	2,554,426	2,104,704	2,346,859
Congo sorts.....	2,110,079	1,757,645	2,128,132	1,808,266	2,188,328
Other sorts.....	618,369	462,643	426,294	216,444	158,531
Sales since Jan. 1...	2,738,384	2,414,542	2,423,111	2,420,217	2,296,893

ANTWERP RUBBER ARRIVALS.

JUNE 19.—By the *Leopoldville*, from the Congo:

Bunge & Co. (Société Générale Africaine) <i>kilos</i>	73,000
Do	8,000
Do	9,000
Do	5,000
Comptoir Commercial Congolais	12,000
L. & W. Van de Velde	99,000
Do	4,000
Cie. Commerciale des Colonies (Col. Kadei Sangha)	6,000
Do	7,000
Charles Dethier	3,500
Société Coloniale Anversoise	19,000
Do	8,000
Do	1,500

JULY 10.—By the *Bruxellesville*, from the Congo:

Bunge & Co. (Société Générale Africaine) <i>kilos</i>	118,500
Do	49,000
Do	26,900
Do	8,000
Do	1,000
Do	65,500
Société Coloniale Anversoise (Belge du Haut Congo)	11,400
Do	3,900
Do	2,000
L. & W. Van de Velde	4,000
M. S. Cols	4,400
Comptoir Commercial Congolais	1,500

London.

EDWARD TILL & Co. report stocks [July 2]:

	1906.	1905.	1904.
Pará sorts.....	—	—	—
Plantation, Ceylon and Straits.....	55	—	—
Borneo.....	82	41	29
Assam and Rangoon.....	13	10	9
Penang.....	208	288	—
Other sorts.....	349	198	268
Total.....	707	537	306
LIVERPOOL {			
Pará sorts.....	926	480	587
Caucho.....	239	266	318
Other sorts.....	493	467	709
Total, United Kingdom.....	2365	1750	1920
Total, June.....	2483	1644	1667
Total, May.....	2630	1515	1644
Total, April.....	2108	1232	1367
Total, March.....	1906	1264	1136
Total, February.....	1539	1298	1341

PRICES PAID DURING JUNE.

	1906.	1905.	1904.
Pará, fine, hard.....	5/ 1¼ @ 5/ 3	5/ 7 @ 5/ 8	4/ 8 @ 4/ 10½
Do soft.....	5/ 0¼ @ 5/ 2	5/ 5¼ @ 5/ 8½	4/ 7½ @ 4/ 9½
Negroheads, scrappy 3/10 @ 3/11	3/11½ @ 4/	3/ 7½ @ 3/ 9	3/ 7½ @ 3/ 9
Do Cameta 3/ 0½ @ 3/ 1	3/ 3 @ 3/ 4½	2/ 8½ @ 2/ 10½	2/ 8½ @ 2/ 10½
Bolivian.....	5/ 2 @ 5/ 3	5/ 7	4/ 8½ @ 4/ 10½
Caucho, ball.....	3/ 6¼ @ 3/ 7	3/ 5¼ @ 3/ 6	3/ 2¾ @ 3/ 4½
Do slab.....	3/ 0½ @ 3/ 1	3/ 0½ @ 3/ 1	2/ 10 @ 2/ 11
Do tails.....	3/ 3 @ 3/ 4	No sales.	No sales.

JULY 6.—The market has been very quiet during a week past, and prices are lower. Hard fine has been sold at 5s. 1d. down to 5s. 0¼d. on the spot and at 5s. 2d. @ 5s. 1¼d. for forward delivery. Peruvian ball steady at 3s. 6¼d. spot; slab 3s. and scrappy 3s. 9d. per pound values. Transactions at to-day's auctions slight.

Plantation Rubber.—There were offered at auction about 2¼ tons Ceylon and about 7¼ tons Straits and Malay States, most of which was bought in. Some of the leading brands maintained their high standard, but others were irregular. Only fine rubber found buyers, at lower prices, in harmony with Brazilian Pará. Twenty-two packages changed hands at an average of 5s. 8d. [= \$1.37½] per pound.

Liverpool.

EDMUND SCHLÜTER & Co. report:

WORLD'S VISIBLE SUPPLY OF PARÁ, JUNE 30.

	1906.	1905.	1904.	1903.	1902.
Tons.....	3385	2617	2028	3335	3776
Prices, hard fine 5/2	5/7	4/9½	3/11¼	2/11¼	2/11¼

LIVERPOOL STOCKS OF AFRICAN RUBBER, JUNE 30.

1906.....	379	1903.....	371	1900.....	777
1905.....	368	1902.....	543	1899.....	530
1904.....	560	1901.....	768	1898.....	368

IMPORTS FROM PARÁ AT NEW YORK.

[The Figures Indicate Weights in Pounds.]

June 25.—By the steamer *Grangense*, from Manáos and Pará:

IMPORTERS,	Fine.	Medium.	Coarse.	Caucho.	Total.
Poel & Arnold.....	66,000	14,800	17,100	45,700=	143,600
Poel & Arnold.....	.....	.....	23,200	.....	23,200
N. Y. Commercial Co.	20,400	8,600	40,000	9,000=	78,000
N. Y. Commercial Co. ....	.....	.....	.....	10,200=	10,200
A. T. Morse & Co.....	32,500	5,000	2,800	9,900=	50,200
A. T. Morse & Co.....	7,000	1,100	2,500	.....	10,600
A. T. Morse & Co.....	8,200	1,900	10,100	.....	20,200
General Rubber Co.....	6,300	800	32,000	5,000=	44,100
General Rubber Co.....	1,300	700	3,100	11,700=	16,800
Neale & Co.....	10,900	1,100	5,700	.....	17,700
Edmund Reeks & Co.....	8,100	600	6,500	.....	15,200
Hagemeyer & Brunn.....	2,800	.....	4,000	.....	4,800
Hagemeyer & Brunn.....	7,600	1,400	2,300	.....	11,300
C. P. dos Santos.....	700	700	1,300	.....	2,700
Total.....	171,800	36,700	148,600	91,500=	448,600

July 3.—By the steamer *Horatio*, from Manáos and Pará:

N. Y. Commercial Co.	59,800	14,400	61,800	46,800	182,800
General Rubber Co.	43,000	6,100	88,300	25,100	162,500
Poel & Arnold.	56,700	17,300	58,100	4,300	136,400
A. T. Morse & Co.	49,100	7,700	15,500	24,700	97,000
C. P. dos Santos.	53,800	9,000	8,000		70,800
Neale & Co.	7,800	1,400	14,300		23,500
Hagemeyer & Brunn.	15,000	1,200	7,100	200	23,500
Edmund Reeks & Co.	13,400	1,300	8,600		23,300
G. Amsinck & Co.	11,300		9,000		20,300

Total..... 309,900 58,400 270,700 101,100 740,100

July 16.—By the steamer *Cearense*, from Manáos and Pará:

General Rubber Co.	121,200	20,500	101,300	50,200	293,200
N. Y. Commercial Co.	121,400	14,300	45,800	13,900	195,400
A. T. Morse & Co.	117,800	20,400	27,400	14,800	180,400
Poel & Arnold.	22,700	12,600	25,500	29,500	90,300
Edmund Reeks & Co.	18,200	4,600	8,400		31,200
Neale & Co.	4,900	700	8,900		14,500
Hagemeyer & Brunn.	6,600	500	2,700		9,800
C. P. dos Santos.	5,200		1,400		6,600

Total..... 418,000 73,600 221,400 108,400 821,400

PARA RUBBER VIA EUROPE.

JUNE 25.—By the <i>Etruria</i> =Liverpool:	
New York Commercial Co. (Fine).....	56,000
JUNE 25.—By the <i>Maravalia</i> =Bolivar:	
Thebaud Brothers (Fine).....	23,000
Thebaud Brothers (Coarse).....	10,000
American Trading Co. (Fine).....	1,500
American Trading Co. (Coarse).....	2,000
JUNE 27.—By the <i>Carmania</i> =Liverpool:	
New York Commercial Co. (Cauchó).....	68,000
New York Commercial Co. (Fine).....	11,500
Poel & Arnold (Coarse).....	11,500
JULY 5.—By the <i>Majestic</i> =Liverpool:	
A. T. Morse & Co. (Coarse).....	15,000
JULY 6.—By the <i>Pennsylvania</i> =Hamburg:	
George A. Alden & Co. (Fine).....	8,000
A. T. Morse & Co. (Cauchó).....	20,000
JULY 9.—By the <i>Umbria</i> =Liverpool:	
New York Commercial Co. (Fine).....	11,000
A. T. Morse & Co. (Coarse).....	7,500
JULY 10.—By the <i>Victorian</i> =Liverpool:	
Poel & Arnold (Cauchó).....	15,000
JULY 11.—By the <i>Coronia</i> =Liverpool:	
New York Commercial Co. (Fine).....	31,000
JULY 13.—By the <i>Advance</i> =Mollendo:	
Boston & Bolivia Co. (Fine).....	5,000
A. D. Hitch & Co. (Fine).....	3,000
A. D. Hitch & Co. (Coarse).....	1,000
JULY 15.—By the <i>Maracas</i> =Cuidad Bolivar:	
Thebaud Brothers (Fine).....	31,000
Thebaud Brothers (Coarse).....	12,000
American Trading Co. (Fine).....	4,500
JULY 17.—By the <i>Georgic</i> =Liverpool:	
Poel & Arnold (Coarse).....	30,000

OTHER ARRIVALS AT NEW YORK

CENTRALS.

JUNE 23.—By the <i>Esperanza</i> =Frontera:	
Harburger & Stack.....	11,500
E. Steiger & Co.....	3,000
American Trading Co.....	3,000
Graham, Hinkley & Co.....	1,500
JUNE 23.—By the <i>Panama</i> =Colon:	
Hirzel, Feltman & Co.....	6,300
Dumarest Bros. & Co.....	2,000
F. Rosenstein & Co.....	2,900
Mann & Emdon.....	1,800
Laurence Johnson & Co.....	1,200
A. Santos & Co.....	1,100
Roldan & Van Sickle.....	1,000
Isaac Kubie & Co.....	800
A. M. Capens Soms.....	600
JUNE 25.—By the <i>Niagara</i> =Tampico:	
Edward Maurer.....	27,000
Harburger & Stack.....	2,000
JUNE 25.—By the <i>Proteus</i> =New Orleans:	
Manhattan Rubber Mfg. Co.....	16,000
G. Amsinck & Co.....	4,500
A. T. Morse & Co.....	2,500
Eggers & Heinlein.....	2,500
E. B. Strout.....	1,500
JUNE 26.—By the <i>Venetia</i> =Colombia:	
H. & S. Henry Co.....	3,000
A. Sanders & Co.....	1,500
Isaac Brandon & Bros.....	1,200
Jeanz & Co.....	700
Kunhardt & Co.....	700
Roldan & Van Sickle.....	600
Wessels, Kulemkamp Co.....	600
D. A. De Lima & Co.....	600
J. S. Halstead.....	500
Mecke & Co.....	500
JUNE 27.—By the <i>El Alba</i> =Galveston:	
Continental & Mexican Co.....	55,000

CENTRALS—Continued.

JUNE 28.—By the <i>La Plata</i> =Caribbean:	
Hirzel Feltman & Co.....	8,700
G. Amsinck & Co.....	1,800
E. B. Strout.....	1,500
J. A. Medina & Co.....	700
Kunhardt & Co.....	500
American Trading Co.....	500
JULY 2.—By the <i>Vigilancia</i> =Mexico:	
H. Marquardt & Co.....	11,500
Fred'k. Probst & Co.....	2,000
E. Steiger & Co.....	1,000
American Trading Co.....	1,000
Isaac Kubie & Co.....	500
JULY 2.—By the <i>Prinz Ethel</i> =Colon:	
G. Amsinck & Co.....	2,000
Kunhardt & Co.....	1,000
Seanz & Co.....	600
American Trading Co.....	700
R. G. Barthold.....	500
George A. Alden & Co.....	600
JULY 2.—By the <i>Manzanillo</i> =Tampico:	
European Account.....	35,000
JULY 3.—By the <i>Financia</i> =Colon:	
G. Amsinck & Co.....	4,100
Dumarest Bros. & Co.....	3,100
Charles E. Griffin.....	1,900
Mann & Emdon.....	1,600
Pablo Calvet & Co.....	1,100
A. Santos & Co.....	1,000
W. R. Grace & Co.....	1,000
Wessels, Kulemkamp Co.....	700
D. A. De Lima & Co.....	600
Piza, Nephews & Co.....	600
Roldan Van Sickle.....	500
JULY 3.—By the <i>El Valle</i> =Galveston:	
Continental & Mexican Co.....	55,000
JULY 3.—By the <i>Tenencia</i> =Bahia:	
American Commercial Co.....	34,000
J. H. Rossback & Bros.....	27,000
A. D. Hitch & Co.....	18,000
A. Hirsch & Co.....	3,500
JULY 5.—By the <i>Sarnia</i> =Colombia:	
D. A. De Lima & Co.....	1,200
Roldan & Van Sickle.....	1,300
Isaac Brandon & Bros.....	500
JULY 6.—By the <i>St. Laurent</i> =Havre:	
Henry A. Gould Co.....	6,000
JULY 7.—By the <i>Monterey</i> =Frontera:	
E. Steiger & Co.....	5,500
Harburger & Stack.....	5,000
E. N. Tabbals & Co.....	2,500
Graham, Hinkley & Co.....	1,000
JULY 7.—By the <i>Colon</i> =Colon:	
Hirzel, Feltman & Co.....	11,400
E. B. Strout.....	1,900
JULY 9.—By the <i>Proteus</i> =New Orleans:	
A. N. Rotholz.....	3,000
Manhattan Rubber Mfg. Co.....	2,000
A. T. Morse & Co.....	2,500
Eggers & Heinlein.....	1,000
G. Amsinck & Co.....	1,000
JULY 9.—By the <i>El Dia</i> =Galveston:	
Continental Mexican Co.....	30,000
JULY 10.—By the <i>Rio Grande</i> =Mobile:	
A. T. Morse & Co.....	2,500
JULY 11.—By the <i>Bayamo</i> =Tuspan:	
Harburger & Stack.....	2,000
H. Marquardt & Co.....	1,000
JULY 12.—By the <i>Trent</i> =Caribbean:	
Isaac Brandon & Bros.....	1,500
A. D. Straus & Co.....	1,600
G. Amsinck & Co.....	1,000
D. A. De Lima & Co.....	1,000
Kunhardt & Co.....	700
Aramburo Incipia.....	500
JULY 13.—By the <i>Advance</i> =Colon:	
Hirzel, Feltman & Co.....	6,600
Mann & Emdon.....	1,300
E. B. Strout.....	1,200

CENTRALS—Continued

Meyer Hecht.....	1,000
Wessels, Kulemkamp Co.....	500
Smithers Nordenholt & Co.....	500
JULY 16.—By the <i>El Alba</i> =Galveston:	
Continental & Mexican Co.....	30,000
JULY 16.—By the <i>Meri a</i> =Frontera:	
Harburger & Stack.....	3,500
H. Marquardt & Co.....	3,000
E. Steiger & Co.....	1,500
American Trading Co.....	500
E. N. Fabbals & Co.....	500
Friedrick Probst & Co.....	500
JULY 16.—By the <i>Minneapolis</i> =London:	
Poel & Arnold.....	4,500
JULY 17.—By the <i>Panama</i> =Colon:	
Piza, Nephews & Co.....	7,000
Estate Henry Feltman.....	3,200
Isaac Brandon & Bros.....	2,800
Dumarest Bros. & Co.....	2,600
Laurence Johnson & Co.....	2,500
Roldan & Van Sickle.....	900
Eggers & Heinlein.....	700
G. Amsinck & Co.....	700
JULY 18.—By the <i>Virginia</i> =Honduras:	
G. Amsinck & Co.....	2,500
Suzarte & Whitney.....	1,500
W. R. Grace & Co.....	1,000
H. Marquardt & Co.....	500
R. G. Barthold.....	500
JULY 18.—By the <i>Yumuri</i> =Tampico:	
Edward Maurer.....	25,000
Harburger & Stack.....	1,600
JULY 19.—By the <i>Sibiria</i> =Colombia:	
Isaac Brandon & Bros.....	2,500
D. J. Favuer Bros.....	700
Kunhardt & Co.....	600
American Trading Co.....	600
Escobar & Gorgoraz.....	600
AFRICANS.	
JUNE 25.—By the <i>Etruria</i> =Liverpool:	
A. T. Morse & Co.....	6,500
George A. Alden & Co.....	5,500
JUNE 25.—By the <i>Vaderland</i> =Antwerp:	
Poel & Arnold.....	35,000
A. T. Morse & Co.....	5,000
JUNE 27.—By the <i>Carmania</i> =Liverpool:	
George A. Alden & Co.....	28,000
Poel & Arnold.....	23,000
Henry A. Gould Co.....	2,500
JUNE 29.—By the <i>Baltic</i> =Liverpool:	
General Rubber Co.....	56,000
Earle Brothers.....	2,500
JUNE 29.—By the <i>Peninsular</i> =Lisbon:	
General Rubber Co.....	56,000
Poel & Arnold.....	56,000
JUNE 29.—By the <i>Republic</i> =Genoa:	
Poel & Arnold.....	3,500
JUNE 30.—By the <i>Lucania</i> =Liverpool:	
Rubber Trading Co.....	7,000
JULY 2.—By the <i>Philadelphia</i> =London:	
Poel & Arnold.....	9,000
JULY 2.—By the <i>Bulgaria</i> =Hamburg:	
George A. Alden & Co.....	6,500
JULY 3.—By the <i>Bovic</i> =Liverpool:	
George A. Alden & Co.....	12,000
A. T. Morse & Co.....	3,300
JULY 3.—By the <i>Kroonland</i> =Antwerp:	
Rubber Trading Co.....	6,500
JULY 6.—By the <i>Pennsylvania</i> =Hamburg:	
A. T. Morse & Co.....	22,500
George A. Alden & Co.....	7,500
JULY 9.—By the <i>Celtic</i> =Liverpool:	
Poel & Arnold.....	45,000
A. W. Brunn & Co.....	15,000

AFRICANS—Continued.

JULY 9.—By the <i>Umbria</i> —Liverpool:			
General Rubber Co.	45,000		
Henry A. Gould Co.	7,000		
A. W. Brunn & Co.	8,000	60,000	

JULY 10.—By the <i>Zeeland</i> —Antwerp:			
Poel & Arnold	70,000		
George A. Alden & Co.	60,000		
General Rubber Co.	25,000		
Rubber Trading Co.	11,000		
Raw Products Co.	7,000	173,000	

JULY 10.—By the <i>Victorian</i> —Liverpool:			
Poel & Arnold	7,000		
A. T. Morse & Co.	7,000	14,000	

JULY 11.—By the <i>Caronia</i> —Liverpool:			
George A. Alden & Co.	6,000		
A. W. Brunn & Co.	3,500	9,500	

JULY 15.—By the <i>America</i> —Antwerp:			
Poel & Arnold	70,000		

JULY 19.—By the <i>Teutonic</i> —Liverpool:			
A. W. Brunn & Co.	11,500		
A. T. Morse & Co.	2,500		
Rubber Trading Co.	2,500	16,500	

JULY 20.—By the <i>Samland</i> —Antwerp:			
Poel & Arnold	50,000		

JULY 20.—By the <i>Sloterdyk</i> —Rotterdam:			
Rubber Trading Co.	11,500		

EAST INDIAN.

JUNE 25.—By the <i>St. Louis</i> —London:			
Poel & Arnold	92,500		
George A. Alden & Co.	3,500	26,000	

JUNE 30.—By the <i>Den of Kelly</i> —Singapore:			
George A. Alden & Co.	50,000		
Heabler & Co.	35,000		
Joseph Cantor	22,000		
F. R. Muller & Co.	10,000	17,000	

JULY 1.—By the <i>Philadelphia</i> —London:			
Poel & Arnold	13,000		

JULY 2.—By the <i>Bulgaria</i> —Hamburg:			
F. R. Muller & Co.	4,500		

JULY 2.—By the <i>Minnetonka</i> —London:			
A. T. Morse & Co.	11,500		

JULY 3.—By the <i>Bovic</i> —Liverpool:			
Poel & Arnold	7,000		

EAST INDIAN—Continued.

JULY 5.—By the <i>Cian MacLachlan</i> —Colombo:			
A. T. Morse & Co.	30,000		
George A. Alden & Co.	11,000	41,000	

JULY 16.—By the <i>Minneapolis</i> —London:			
Poel & Arnold	11,500		

JULY 16.—By the <i>Vand</i> —Singapore:			
Poel & Arnold	45,000		
Heabler & Co.	25,000		
Joseph Cantor	13,000	83,000	

JULY 20.—By the <i>Patricia</i> —Hamburg:			
Poel & Arnold	7,500		

GUTTA-JELUTONG.

JUNE 30.—By the <i>Den of Kelly</i> —Singapore:			
Heabler & Co.	135,000		
George A. Alden & Co.	150,000		
Robinson & Stiles	35,000		
Joseph Cantor	55,000		
H. Raoult & Co.	110,000		
For Canada	35,000	540,000	

JULY 16.—By the <i>Vandalia</i> —Singapore:			
Poel & Arnold	125,000		
Heabler & Co.	30,000		
J. W. Phyfer & Co.	50,000		
Robinson & Stiles	35,000		
Joseph Cantor	25,000	265,000	

GUTTA-PERCHA AND BALATA.

JUNE 30.—By the <i>La Lorraine</i> —Havre:			
George A. Alden & Co.	2,500		

JULY 2.—By the <i>Bulgaria</i> —Hamburg:			
To Order	7,000		

JULY 16.—By the <i>Vandalia</i> —Singapore:			
Heabler & Co.	9,000		

BALATA.

JUNE 25.—By the <i>Maraval</i> —Cuidad Bolivar:			
Middleton & Co.	4,500		
Thebaud Brothers	4,500	9,000	

JUNE 25.—By the <i>St. Louis</i> —London:			
F. R. Muller & Co.	4,500		

JULY 2.—By the <i>Bulgaria</i> —Hamburg:			
Earle Brothers	2,000		

JULY 16.—By the <i>Maracas</i> —Cuidad Bolivar:			
Thebaud Brothers	5,000		
Middleton & Co.	4,500	9,500	

BALATA.—Continued.

JULY 20.—By the <i>Sloterdyk</i> —Rotterdam:			
Earle Brothers	7,000		

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—JUNE.

Imports:	Pounds.	Value.
India-rubber	2,460,816	\$2,681,390
Gutta-percha	34,328	16,046
Gutta-jelutong (Pontianak)	2,082,705	66,199
Total	4,577,749	\$2,763,635

Exports:			
India-rubber	78,017	\$ 37,668	
Reclaimed rubber	132,919	19,544	
Rubber scrap imported	577,975	\$ 42,789	

BOSTON ARRIVALS.

	POUNDS.
MAY 2.—By the <i>Michigan</i> —Liverpool:	
Poel & Arnold.—African	11,218
MAY 10.—By the <i>Canadian</i> —Liverpool:	
George A. Alden & Co.—African	3,456

MAY 11.—By the <i>Columbian</i> —Liverpool:			
George A. Alden & Co.—East Indian	1,577		

MAY 14.—By the <i>Mashona</i> —Calcutta:			
George A. Alden & Co.—East Indian	2,033		

MAY 15.—By the <i>Canopus</i> —Genoa:			
George A. Alden & Co.—African	1,985		

MAY 19.—By the <i>Sylvanian</i> —Liverpool:			
F. R. Muller & Co.—African	11,730		

MAY 22.—By the <i>Sagamore</i> —Liverpool:			
Poel & Arnold—African	7,108		

MAY 26.—By the <i>Saxonia</i> —Liverpool:			
F. R. Muller & Co.—African	4,400		

MAY 31.—By the <i>Romania</i> —Genoa:			
George A. Alden & Co.—African	2,269		

Total			
	45,818		

[Value \$31,729.]

GUTTA-PERCHA.

MAY 11.—By the <i>Feornia</i> —Liverpool:			
To Order	98		

OFFICIAL STATISTICS OF CRUDE INDIA-RUBBER (IN POUNDS).

UNITED STATES.				GREAT BRITAIN.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
May, 1906	4,669,508	309,795	4,359,713	May, 1906	5,948,768	3,268,048	2,680,720
January-April	24,928,962	1,229,754	23,699,208	January-April	23,847,264	12,645,584	11,201,680
Five months, 1906	29,598,470	1,539,549	28,058,921	Five months, 1906	29,796,032	15,913,632	13,882,400
Five months, 1905	36,138,536	1,353,926	34,784,610	Five months, 1905	27,856,192	15,425,880	12,430,312
Five months, 1904	31,994,423	1,461,909	30,532,514	Five months, 1904	26,208,896	15,310,070	10,898,826

GERMANY.				ITALY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
May, 1906				May, 1906	207,240	29,040	178,200
January-April	14,560,260	3,954,060	10,606,200	January-April	958,540	97,680	860,860
Five months, 1906				Five months, 1906	1,165,780	126,720	1,039,060
Five months, 1905	18,987,980	6,113,580	12,874,400	Five months, 1905	733,920	117,040	616,880
Five months, 1904	15,022,260	4,284,280	10,737,980	Five months, 1904	738,100	49,280	688,820

FRANCE.*				BELGIUM †			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
May, 1906	2,933,700	1,924,120	1,009,580	May, 1906	2,279,167	1,149,889	1,129,278
January-April	12,166,440	5,237,540	6,928,900	January-April	7,097,065	4,173,956	2,923,109
Five months, 1906	15,100,140	7,161,660	7,938,480	Five months, 1906	9,376,232	5,323,845	4,052,387
Five months, 1905	12,358,720	6,784,580	5,574,140	Five months, 1905	7,381,865	5,318,974	2,062,891
Five months, 1904	9,274,320	5,946,820	3,327,500	Five months, 1904	7,963,093	6,306,161	1,656,932

NOTE.—German statistics before Jan. 1, 1906, include Gutta-percha, Balata, and old (waste) rubber. British figures include old rubber. French, Austrian, and Italian figures include Gutta-percha. The exports from the United States embrace the supplies for Canadian consumption.

*General Commerce.

†Special Commerce.

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CLASSIFIED LIST OF MANUFACTURERS AND DEALERS IN INDIA-RUBBER GOODS AND RUBBER MANUFACTURERS' SUPPLIES.

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XXI	Rubber Trading Co.						
U		V		W		Y	
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XXXI	Royle & Sons, John	XXI	Rubber Trading Co.				
XXI	Rubber Trading Co.						
V		W		X		Z	
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XXXI	Royle & Sons, John	XXI	Rubber Trading Co.				
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Canadian Rubber Co. of Montreal.	
Chicago Rubber Wks., Chicago.	
Cincinnati Rubber Mfg. Co., Cincinnati.	
Cleveland Rubber Co., Cleveland, O.	
Continental Caoutchouc & Guttapercha Co., Hanover, Germany.	
The Dermatine Co., London.	
Dunlop Tire & Rubber Goods Co., Toronto.	
Empire Rubber Mfg. Co., Trenton, N. J.	

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Eureka Rubber Mfg. Co. of Trenton.

B. F. Goodrich Co., Akron, O.

Gutta Percha & Rubber Mfg. Co., N. Y.

Gutta Percha & Rubber Mfg. Co., Toronto.

Home Rubber Co., Trenton, N. J.

Lake Shore Rubber Co., Erie, Pa.

Manhattan Rubber Mfg. Co., New York.

Mechanical Rubber Co., New York.

National India-Rubber Co., Bristol, R. I.

N. J. Car Spring & Rubber Co., Jersey City, N. J.

New York Belting & Packing Co., N. Y.

New York Rubber Co., New York.

North British Rubber Co., Ltd., Edinburgh.

Peerless Rubber Mfg. Co., New York.

Pirelli & Co., Milan, Italy.

Republic Rubber Co., Youngstown, Ohio.

Revere Rubber Co., Boston.

Standard Rubber Co., Trenton, N. J.

Jos. Stokes Rubber Co., Trenton, N. J.

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Voorhees Rubber Mfg. Co., Jersey City.

Whitehead Bros. Rubber Co., Trenton, N. J.

Air Brake Hose.

Boston Belting Co., Boston-New York.

Boston Woven Hose & Rubber Co.

Canadian Rubber Co. of Montreal.

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Eureka Rubber Mfg. Co. of Trenton.

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Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston, Mass.
Voorhees Rubber Mfg. Co., Jersey City

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Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Cleveland Rubber Co., Cleveland, O.
Dart Rubber Co., Providence, R. I.
Electric Hose & Rubber Co., Wilmington, Del.
Empire Rubber Mfg. Co., Trenton, N. J.
F. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City

Deckle Straps.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
F. F. Goodrich Co., Akron, O.
Mechanical Rubber Co., Chicago.
New York Belting & Packing Co., N. Y.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York

Door Springs.

Hodgman Rubber Co., New York.

Dredging Sleeves.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
F. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.
H. J. Car Spring & Rubber Co., Jersey City.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston, Mass.

Force Cups.

Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Fruit Jar Rings.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cincinnati Rubber Mfg. Co., Cincinnati, O.
Cleveland Rubber Co., Cleveland, O.
F. F. Goodrich Co., Akron, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Rubber Mfg. Co., Trenton.
Manhattan Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, Ohio.
New York Belting & Packing Co., N. Y.

Fuller Balls.

F. F. Goodrich Co., Akron, O.
National India Rubber Co., Bristol, R. I.
H. J. Car Spring & Rubber Co., Jersey City.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.

Gage Glass Washers.

Boston Belting Co., Boston, Mass.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Electric Hose & Rubber Co., Wilmington, Del.
Empire Rubber Mfg. Co., Trenton, N. J.
F. F. Goodrich Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Mechanical Rubber Co., Chicago, Ill.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Revere Rubber Co., Boston, Mass.
Jos. Stokes Rubber Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City, N. J.

Gas-Bags (Rubber).

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Dart Rubber Co., Providence, R. I.
F. F. Goodrich Co., Akron, O.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.

Gas Bags (Rubber).—Continued.

Peerless Rubber Mfg. Co., New York.
Tyer Rubber Co., Andover, Mass.
Voorhees Rubber Mfg. Co., Jersey City.

Gasket Tubing.

Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Jenkins Bros., New York.
National India Rubber Co., Bristol, R. I.
Revere Rubber Co., Boston.

Grain Drill Tubes.

Cincinnati Rubber Mfg. Co., Cincinnati, O.

Hat Bags.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co.
Mechanical Rubber Co., Chicago.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.

Horse Shoe Pads.

Canadian Rubber Co. of Montreal.
Home Rubber Co., Trenton, N. J.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City

Hose—Armored.

Hose—Wire Wound.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Electric Hose & Rubber Co., Wilmington, Del.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Voorhees Rubber Mfg. Co., Jersey City.

Hose Core.

Alderfer Crute Co., Sharon Center, Ohio.

Hose Couplings and Fittings.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.

Hose Linings.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Rubber Mfg. Co., Trenton, N. J.
F. F. Goodrich Co., Akron, O.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston.

Hose—Protected.

Boston Belting Co., Boston-New York.
Gutta Percha & Rubber Mfg. Co., N. Y.
Electric Hose & Rubber Co., Wilmington, Del.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Hose Racks and Reels.

Gutta Percha & Rubber Mfg. Co., N. Y.
Wirt & Knox Mfg. Co., Philadelphia.

Hose—Rubber Lined.

COTTON AND LINEN.
Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Gutta Percha & Rubber Mfg. Co., N. Y.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Rubber Mfg. Co., Trenton.
Fabric Fire Hose Co., New York.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Gutta Percha and Rubber Mfg. Co. of Toronto.

Hose—Rubber Lined.—Continued.

COTTON AND LINEN.

Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.
Jos. Stokes Rubber Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City.

Hose—Submarine.

Boston Belting Co., Boston-New York.
Electric Hose & Rubber Co., Wilmington, Del.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.
A. Schrader's Son, Inc., New York.

"Jenkins '95" Packing.

Jenkins Bros., New York.

Lawn Sprinklers.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.

Mallets (Rubber).

Boston Belting Co., Boston-New York.
B. F. Goodrich Co., Akron, O.
National India Rubber Co., Bristol, R. I.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston-New York.

Mould Work.

[See Mechanical Rubber Goods.]

Davidson Rubber Co., Boston.
Dart Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
Hodgman Rubber Co., New York.
La Grose (Wis.) Rubber Mills Co.
Mattson Rubber Co., New York.
Mitzel Rubber Co., Akron, O.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

"Nubian" Packing.

Voorhees Rubber Mfg. Co., Jersey City.

Oil Well Supplies.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.
Lake Shore Rubber Co., Erie, Pa.
N. J. Car Spring & Rubber Co., Jersey City.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-Pittsburgh.
Voorhees Rubber Mfg. Co., Jersey City.

Paper Machine Rollers.

Boston Belting Co., Boston-New York.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Peerless Rubber Mfg. Co., New York.
Voorhees Rubber Mfg. Co., Jersey City.

Plumbers' Supplies.

Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Republic Rubber Co., Youngstown, O.

Pump Valves.

[See Mechanical Rubber Goods.]

Jenkins Bros., New York.
Revere Rubber Co., Boston, Mass.

Rollers—Rubber Covered.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Rubber Mfg. Co., Trenton.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Mechanical Rubber Co., Chicago.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.

Sewing Machine Rubbers.

B. F. Goodrich Co., Akron, O.

Springs—Rubber.

Boston Belting Co., Boston-New York.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Hardman Rubber Co., Belleville, N. J.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Republic Rubber Co., Youngstown, Ohio.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Stair Treads.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Thread.

B. F. Goodrich Co., Akron, O.
Mechanical Fabric Co., Providence, R. I.
Revere Rubber Co., Boston.

Tiling.

Anchor Tile Co., Trenton, N. J.
Canadian Rubber Co. of Montreal, Ltd.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, Ohio.
Voorhees Rubber Mfg. Co., Jersey City.

Tubing.

[See Mechanical Rubber Goods]
American Hard Rubber Co., New York.
Davidson Rubber Co., Boston.
Dart Rubber Co., Providence, R. I.
Hardman Rubber Co., Belleville, N. J.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

Valve Balls.

Boston Belting Co., Boston.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Co., Akron, O.
Manhattan Rubber Mfg. Co., New York.
Mechanical Rubber Co., Chicago.
National India Rubber Co., Bristol, R. I.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.

Valve Discs.

American Hard Rubber Co., New York.
Boston Belting Co., Boston-New York.
B. F. Goodrich Co., Akron, O.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.

Valves.

[See Mechanical Rubber Goods.]
Jenkins Bros., New York-Chicago.

Vulcanite Emery Wheels.

Manhattan Rubber Mfg. Co., Passaic, N. J.
New York Belting & Packing Co., Ltd., New York.

Wringer Rolls.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Republic Rubber Co., Youngstown, O.

RUBBER BUYERS' DIRECTORY—CONTINUED.

DRUGGISTS' AND STATIONERS' SUNDRIES

Atomizers.
Bandages.
Bulbs.
Syringes.
Water Bottles.

Druggists' Sundries—General.
American Hard Rubber Co., New York.
U. J. Bailey & Co., Boston.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davidson Rubber Co., Boston.
Davit Rubber Co., Providence, R. I.
Est. of Jos. Bachrach, Brooklyn, N. Y.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
Hodgman Rubber Co., New York
Mittel Rubber Co., Akron, O.
National India Rubber Co., Bristol, R. I.
North British Rubber Co., Ltd., Edinburgh.
Pirelli & Co., Milan, Italy.
Seamless Rubber Co., New Haven, Ct.
Tyer Rubber Co., Andover, Mass.

Balloons.
King & Leatherow, Newark, N. J.
Balls, Dolls and Toys.
New York Rubber Co., New York.

Combs.
American Hard Rubber Co., New York.

Elastic Bands.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, Ohio.
Davidson Rubber Co., Boston.
Davit Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York-Boston.
Tyer Rubber Co., Andover, Mass.

Erasive Rubbers.
Davidson Rubber Co., Boston.
B. F. Goodrich Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
Mattson Rubber Co., New York.

Finger Cots.
Cleveland Rubber Co., Cleveland, Ohio.
Faultless Rubber Mfg. Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Pure Gum Specialty Co., Barborton, O.

Gloves.
Canadian Rubber Co. of Montreal.
Davit Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
King & Leatherow, Newark, N. J.
National India Rubber Co., Bristol, R. I.
Pure Gum Specialty Co., Barborton, O.

Hard Rubber Goods.
American Hard Rubber Co., New York.
Canadian Rubber Co. of Montreal.
Davit Rubber Co., Providence, R. I.
Hardman Rubber Co., Belleville, N. J.
Stokes Rubber Co., Joseph, Trenton, N. J.
Tyer Rubber Co., Andover, Mass.

Hospital Sheetings.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davit Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

Ice Bags and Ice Caps.
Est. of Jos. Bacharach, Brooklyn, N. Y.
Cleveland Rubber Co., Cleveland, Ohio.
Faultless Rubber Co., Akron, Ohio.
B. F. Goodrich Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
National India Rubber Co., Bristol, R. I.
Pure Gum Specialty Co., Barborton, O.
Tyer Rubber Co., Andover, Mass.

Life Preservers.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Nipples.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davit Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Pure Gum Specialty Co., Barborton, O.
Tyer Rubber Co., Andover, Mass.

Seamless Rubber Goods.
H. A. Kaysan, Cassel, Germany.

Shower Bath Sprinklers.
A. Schrader's Son, Inc., New York.

Sponges (Rubber).
Faultless Rubber Co., Ashland, Ohio.

Stationers' Sundries.
American Hard Rubber Co., New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cincinnati Rubber Mfg. Co., Cincinnati, O.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davit Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
Hodgman Rubber Co., New York-Boston.
Seamless Rubber Co., New Haven, Ct.
Tyer Rubber Co., Andover, Mass.

Stopples (Rubber).
Cleveland Rubber Co., Cleveland, O.
Davit Rubber Co., Providence, R. I.
Hodgman Rubber Co., New York.
Manhattan Rubber Mfg. Co., New York.
National India Rubber Co., Bristol, R. I.
New York Belting & Packing Co., N. Y.
A. Schrader's Son, Inc., New York.
Tyer Rubber Co., Andover, Mass.

Throat Bags.
Cleveland Rubber Co., Cleveland, O.
Davit Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
National India Rubber Co., Bristol, R. I.
Tyer Rubber Co., Andover, Mass.

Tobacco Pouches.
Canadian Rubber Co. of Montreal.
Faultless Rubber Co., Akron, Ohio.
B. F. Goodrich Co., Akron, O.
Pure Gum Specialty Co., Barborton, O.
Tyer Rubber Co., Andover, Mass.

MACKINTOSHED AND SURFACE GOODS

Air Goggles (Rubber).
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davit Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Providence.
Tyer Rubber Co., Andover, Mass.

Air Mattresses.
Canadian Rubber Co. of Montreal.
Mechanical Fabric Co., Providence, R. I.
National India Rubber Co., Bristol, R. I.

Barbers' Bibs.
Cleveland Rubber Co., Cleveland, Ohio.
Davit Rubber Co., Providence, R. I.
Tyer Rubber Co., Andover, Mass.

Bathing Caps.
Davit Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.

Bel lows Cloths.
Boston Rubber Co., Boston.
Cleveland Rubber Co., Cleveland, O.
Hodgman Rubber Co., New York.
La Crosse (Wis.) Rubber Mills Co.

Calendering.
La Crosse (Wis.) Rubber Mills Co.
Plymouth Rubber Co., Stoughton, Mass.

Carriage Ducks and Drills.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Sureka Rubber Mfg. Co. of Trenton.
Gutta Percha & Rubber Mfg. Co. of Toronto.
National India Rubber Co., Bristol, R. I.

Clothing.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Granby Rubber Co., Granby, Quebec.
Gutta Percha & Rubber Mfg. Co. of Toronto.
Hodgman Rubber Co., New York.
La Crosse (Wis.) Rubber Mills Co.
National India Rubber Co., Bristol, R. I.
North British Rubber Co., Ltd., Edinburgh.
Pirelli & Co., Milan, Italy.

Cravenette.
Cravenette Co., Ltd.

Diving Apparatus.
A. Schrader's Son, Inc., New York.

Diving Dresses.
Hodgman Rubber Co., New York

Dress Shields.
Mattson Rubber Co., New York.

Horse Covers.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Leggings.
Cleveland Rubber Co., Cleveland, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Mackintoshes.
[See Clothing.]

Proofing.
Canadian Rubber Co. of Montreal.
La Crosse (Wis.) Rubber Mills Co.
Plymouth Rubber Co., Stoughton, Mass.

Rain Coats.
Cravenette Co., Ltd.

Rubber Coated Cloths.
Mechanical Fabric Co., Providence, R. I.

RUBBER FOOTWEAR

Boots and Shoes.
American Rubber Co., Boston.
Boston Rubber Shoe Co., Boston.
Canadian Rubber Co. of Montreal.
L. Candee & Co., New Haven, Ct.
B. F. Goodrich Co., Akron, O.
Granby Rubber Co., Granby, Quebec.
Gutta Percha & Rubber Mfg. Co. of Toronto.
Hood Rubber Co., Boston.
Lycorning Rubber Co., Williamsport, Pa.
Meyer Rubber Co., New York.
National India Rubber Co., Boston.
North British Rubber Co., Ltd., Edinburgh.
United States Rubber Co., New York.
Wales-Goodyear Rubber Co., Boston.
Woonsocket Rubber Co., Providence.

Heels and Soles.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Continental Caoutchouc & Gutta-percha Co., Hanover.
Grieb Rubber Co., Trenton, N. J.
Plymouth Rubber Co., Stoughton, Mass.

Tennis Shoes.
American Rubber Co., Boston.
Boston Rubber Shoe Co., Boston.
Granby Rubber Co., Granby, Quebec.
La Crosse Rubber Mills Co., La Crosse, Wis.
National India Rubber Co., Providence.
United States Rubber Co., New York.

Wading Pants.
Canadian Rubber Co. of Montreal.
Hodgman Rubber Co., New York.

DENTAL AND STAMP RUBBER

Dental Gum.
American Hard Rubber Co., New York.
Cleveland Rubber Co., Cleveland, O.
Tyer Rubber Co., Andover, Mass.

Rubber Dam.
Cleveland Rubber Co., Cleveland, O.
Davit Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Tyer Rubber Co., Andover, Mass.

Stamp Gum.
B. F. Goodrich Co., Akron, O.
Mattson Rubber Co., New York.
Mechanical Rubber Co., Chicago, Ill.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.

ELECTRICAL

Electrical Supplies.
American Hard Rubber Co., New York.
Lake Shore Rubber Co., Erie, Pa.
Joseph Stokes Rubber Co., Trenton, N. J.
Massachusetts Chemical Co., Boston.
Tyer Rubber Co., Andover, Mass.

Friction Tape.
Boston Belting Co., Boston.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Rubber Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Massachusetts Chemical Co., Boston.
Mechanical Rubber Co., Chicago.
National India Rubber Co., Bristol, R. I.
Revere Rubber Co., Boston-New York.

Hard Rubber Goods.
American Hard Rubber Co., New York.
Canadian Rubber Co. of Montreal.
Joseph Stokes Rubber Co., Trenton, N. J.

Insulating Compounds.
Canadian Rubber Co. of Montreal.
Gutta-Percha & Rubber Mfg. Co., Toronto.
Massachusetts Chemical Co., Boston.

Insulated Wire and Cables.
National India Rubber Co., Providence

Splicing Compound.
Home Rubber Co., Trenton, N. J.

SPORTING GOODS

Foot Balls.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Faultless Rubber Co., Akron, Ohio.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York
National India Rubber Co., Bristol, R. I.

Golf Balls.
Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Davidson Rubber Co., Boston.
B. F. Goodrich Co., Akron, O.

Submarine Outfits.
Hodgman Rubber Co., New York.

RUBBER BUYERS' DIRECTORY—CONTINUED.

Sporting Goods.

Canadian Rubber Co. of Montreal.
Faultless Rubber Co., Akron, Ohio.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Tyer Rubber Co., Andover, Mass.

Striking Bags.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, Ohio.
Faultless Rubber Co., Akron, Ohio.
B. F. Goodrich Co., Akron, O.
Pure Gum Specialty Co., Barberton, O.

MISCELLANEOUS

Boiler Specialist.

H. W. Jones, New York.

Carriage Washer.

Ideal Carriage Washer Co.

Cement (Rubber).

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.

Cement (Rubber).—Continued.

Hadley Cement Co., Lynn, Mass.
Manhattan Rubber Mfg. Co., New York
N. J. Car Spring & Rubber Co., Jersey
City, N. J.
New York Belting & Packing Co., N. Y.

Chemical Analyses.

Durand Woodman, Ph. D., New York.
H. L. Terry, Manchester, England.

Chemists.

Stephen P. Sharples, Boston, Mass.
Durand Woodman, Ph. D., New York.

Engraver.

F. C. Smith, Boston, Mass.

Rubber Journals.

Gummi-Zeitung, Dresden, Germany.

Rubber Planting.

Ohio Rubber Culture Co., Canton, Ohio.

Rubber Tree Seeds.

J. P. William & Bros., Heeratsgoda,
Ceylon.

MACHINERY AND SUPPLIES FOR RUBBER MILLS.

RUBBER
MACHINERY

Acid Tanks.

Birmingham Iron Foundry, Derby, Ct.

Band Cutting Machine.

A. Adamson, Akron, O.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.

Belt Folding Machines.

Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.

Belt Slitters.

Cloth Dryers.

Gearing.

Shafting.

Wrapping Machines.

Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.

Belt Stretchers.

Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
Hoggson & Pettis Mfg. Co., New Haven.

Boilers.

William E. Thropp, Trenton, N. J.
John E. Thropp & Sons Co., Trenton,
N. J.

Braidors.

New England Butt Co., Providence, R. I.

Buckles.

The Weld Mfg. Co., Boston.

Cabling Machinery.

Alton Machine Co., New York.

Calenders.

Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
Textile-Finishing Machinery Co., Providence, R. I.

Castings.

A. Adamson, Akron, O.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.

Chucks (Lathes).

Hoggson & Pettis Mfg. Co., New Haven.

Churns.

American Tool & Machine Co., Boston.

Clutches.

Farrel Foundry & Mach. Co., Ansonia, Ct.

Crackers.

Alton Machine Co., New York.

Devulcanizers.

Alton Machine Co., New York.
Biggs Boiler Works Co., Akron, Ohio.
Birmingham Iron Foundry, Derby, Ct.
Edred W. Clark, Hartford, Ct.
William R. Thropp, Trenton, N. J.

Dies.

John J. Adams, Worcester, Mass.
Barbour Bros., Trenton, N. J.
T. J. Beaudry, Mariboro, Mass.
Brookton Die Co., Brookton, Mass.
J. W. Deewes, Philadelphia, Pa.

Dies.—Continued.

Hoggson & Pettis Mfg. Co., New Haven.
Independent Die Co., Brockton, Mass.
Joseph E. Knox & Co., Lynn, Mass.

Doubling Machines.

American Tool & Machine Co., Boston.

Drying Apparatus.

American Process Co., New York.

Drying Machines.

Alton Machine Co., New York.
Joseph P. Devine, Buffalo, N. Y.
Birmingham Iron Foundry, Derby, Ct.
Textile-Finishing Machinery Co., Providence, R. I.

Embossing Calenders.

Textile-Finishing Machinery Co., Providence, R. I.

Engines, Steam.

Alton Machine Co., New York.
William R. Thropp, Trenton, N. J.
John E. Thropp & Sons Co., Trenton,
N. J.

Engraving Roll.

Hoggson & Pettis Mfg. Co., New Haven.

Grinders and Mixers.

Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
William E. Thropp, Trenton, N. J.

Hangers.

Farrel Foundry & Mach. Co., Ansonia, Ct.

Hose Machines.

A. Adamson, Akron, Ohio.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
New England Butt Co., Providence, R. I.

Hydraulic Accumulators.

Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.

Hydraulic Machinery.

Insulating Machinery.

Iron Castings.

Alton Machine Co., New York.

Lasts (Rubber Shoe).

Middlesex Last Co., Boston.

Lathes—Hard Rubber.

A. Adamson, Akron, Ohio.

Lathes—Jar Ring.

A. Adamson, Akron, Ohio.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
William R. Thropp, Trenton, N. J.

Machinists' Tools.

Hoggson & Pettis Mfg. Co., New Haven.

Moulds.

A. Adamson, Akron, Ohio.
Alton Machine Co., New York.
W. E. Arnold, Malden, Mass.
Barbour Bros., Trenton, N. J.
Birmingham Iron Foundry, Derby, Ct.
J. W. Dewees, Philadelphia, Pa.
Hoggson & Pettis Mfg. Co., New Haven.

Pillow Blocks.

Farrel Foundry & Mach. Co., Ansonia, Ct.

Presses (for Rubber Work.)

A. Adamson, Akron, O.
Alton Machine Co., New York.
Bay State Machine Co., Erie, Pa.
Birmingham Iron Foundry, Derby, Ct.
Boomer & Boschert Press Co., Syracuse,
N. Y.
Edred W. Clark, Hartford, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
William R. Thropp, Trenton, N. J.

Pumps

Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Boomer & Boschert Press Co., Syracuse.
Farrel Foundry & Mach. Co., Ansonia, Ct.

Racks for Boot and Shoe Cars.

Hoggson & Pettis Mfg. Co., New Haven.

Reducing Valves.

Mason Regulator Co., Boston.

Rollers (Hand).

Hoggson & Pettis Mfg. Co., New Haven.

Rubber Covering Machines.

Alton Machine Co., New York.

Rubber Growers' Utensils.

CEMENT CANS AND TANKS.

American Can Co., New York.

REPAIRING KIT BOXES.

American Can Co., New York.

Separators.

Turner, Vaughn & Taylor Co., Cuyahoga
Falls, Ohio.

Separators for Reclaimed Rubber.

American Process Co., New York.

Special Rubber Machinery.

Alton Machine Co., New York.
Wellman Sole Cutting Machine Co.,
Medford, Mass.

Spreaders.

Alton Machine Co., New York.
American Tool & Machine Co., Boston.
Birmingham Iron Foundry, Derby, Ct.
New England Butt Co., Providence, R. I.

Steam Traps and Specialties.

Jenkins Bros., New York.
Mason Regulator Co., Boston.
Osgood Sayen, Philadelphia, Pa.

Steel Stamps.

Hoggson & Pettis Mfg. Co., New Haven.

Stitchers (Hand).

Hoggson & Pettis Mfg. Co., New Haven.

Strip Covering Machines.

Strip Cutters.

Alton Machine Co., New York.

New England Butt Co., Providence, R. I.

Tire Molds.

Bay State Machine Co., Erie, Pa.

Tubing Machines.

A. Adamson, Akron, O.
Alton Machine Co., New York.
Bay State Machine Co., Erie, Pa.
Edred W. Clark, Hartford, Ct.
John Royle & Sons, Paterson, N. J.

Vacuum Drying Chambers

Alton Machine Co., New York.

Joseph P. Devine Co., Buffalo, N. Y.

Varnishing Machines.

Birmingham Iron Foundry, Derby, Ct.

Vulcanizers.

Alton Machine Co., New York.
Biggs Boiler Works Co., Akron, Ohio.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
William R. Thropp, Trenton, N. J.
John E. Thropp's Sons Co., Trenton,
N. J.

Washers.

Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
William R. Thropp, Trenton, N. J.
Turner, Vaughn & Taylor Co., Cuyahoga
Falls, Ohio.

Wire Insulating Machines.

Alton Machine Co., New York.

New England Butt Co., Providence, R. I.

Wire Rope Machinery.

Alton Machine Co., New York.

SECOND-HAND

MACHINERY.

SECOND-HAND

MACHINERY.

Philip Broomfield, Boston, Mass.

W. C. Coleman Co., Rochelle Park, N. J.

Philip McGorry, Trenton, N. J.

M. Norton & Co., Charlestown, Mass.

FACTORY

SUPPLIES

Acid (Carbolic).

Barrett Mfg. Co., Philadelphia.

Antimony, Sulphurets of.

GOLDEN.

Actien-Ges. Georg Egestorff's Salz-
werke, Linden, Germany.
Atlas Chemical Co., Newtonville, Mass.
GOLDEN AND CRIMSON.

Joseph Cantor, New York.

Geo. F. Lufbery, Jr., Elizabeth, N. J.

Wm. H. Scheel, New York.

Stamford (Conn.) Rubber Supply Co.

Type & King, London, England.

Balata.

George A. Alden & Co., Boston.

Benzol.

Barrett Mfg. Co., Philadelphia.

Samuel Cabot, Boston.

Black Hypo.

Joseph Cantor, New York.

William H. Scheel, New York.

Type & King, London, England.

Boxes (Wood).

Henry H. Sheip & Co., Philadelphia.

Brass Fittings.

A. Schrader's Son, Inc., New York.

Carbon Bisulphide.

George W. Speaight, New York.

Caustic Soda.

Acker Process Co., Niagara Falls, N. Y.

Chemicals.

Acker Process Co., Niagara Falls, N. Y.

George W. Speaight, New York.

S. P. Wetherill Co., Philadelphia, Pa.

Colors.

Joseph Cantor, New York.

William H. Scheel, New York.

Type & King, London, England.

S. P. Wetherill Co., Philadelphia, Pa.

MACHINERY AND SUPPLIES FOR RUBBER MILLS—CONTINUED.

<p>Crude Rubber. George A. Alden & Co., Boston. A. W. Brunn & Co., New York. Hagemeyer & Brunn, New York. Adolph Hirsch & Co., New York. F. R. Müller & Co., New York. Para Recovery Co., Bayonne, N. J. Rubber Trading Co., New York-Boston.</p> <p>Dermatine. The Dermatine Co., London.</p> <p>Ducks and Drills (Cotton). J. H. Lane & Co., New York.</p> <p>Gilsonite. William H. Scheel, New York.</p> <p>Graphite. United States Graphite Co., Philadelphia.</p> <p>Graphite Grease. Jos. Dixon Crucible Co., Jersey City.</p> <p>Guayule Rubber. Continental Rubber Co. Ed. Maurer, New York.</p> <p>Gutta-Percha. George A. Alden & Co., Boston. Rubber Trading Co., New York-Boston.</p> <p>Hose Bands, Straps & Menders. Boston Woven Hose & Rubber Co. William Yerdon, Fort Plain, N. Y.</p> <p>Hose Pipes, Nozzles & Couplings. Boston Woven Hose & Rubber Co. Eureka Fire Hose Co., New York. Revere Rubber Co., Boston. A. Schrader's Son, Inc., New York.</p>	<p>Hydro-Carbon Products. Geo. A. Alden & Co., Boston. William H. Scheel, New York.</p> <p>Infusorial Earth. Stamford (Conn.) Rubber Supply Co.</p> <p>Lampblack. Samuel Cabot, Boston.</p> <p>Lawn-Hose Supporters. O. J. Bailey & Co., Boston.</p> <p>Lead—Blue. Lead—Sublimed White. Picher Lead Co., Chicago, Ill.</p> <p>Lithopone. Gabriel & Schall, New York.</p> <p>Naphtha. Barrett Mfg. Co., Philadelphia.</p> <p>Paris White and Whiting. H. F. Taintor Mfg. Co., New York.</p> <p>Reclaimed Rubber. Alkali Rubber Co., Akron, Ohio. American Reclaimed Rubber Co., Rochelle Park, N. J. F. H. Appleton & Son, Boston. Bloomington (N. J.) Soft Rubber Co. E. H. Clapp Rubber Co., Boston, Mass. Danversport Rubber Co., Boston. Derby Rubber Co., Derby, Conn. Eastern Rubber Co., New York. Trenton (N. J.) Rubber Reclaiming Works. Manufactured Rubber Co. New Jersey Rubber Co., Lambertville, N. J.</p>	<p>Reclaimed Rubber.—Continued. Pequannoc Rubber Co., Butler, N. J. Philadelphia Rubber Wks., Philadelphia. Stockton Rubber Co., Stockton, N. J. Jos. Stokes Rubber Co., Trenton, N. J. S. & L. Rubber Co., Chester, Pa. U. S. Rubber Reclaiming Wks., N. Y. Westmoreland Rubber Mfg. Co., Grapeville, Pa.</p> <p>AGENTS AND DEALERS Goldberg & Rathman, Boston, Mass. Philip McGrory, Trenton, N. J. H. F. Moorhouse, Paris, France. Rubber Trading Co., New York-Boston. Wm. Somerville's Sons, Liverpool.</p> <p>Scrap Rubber. L. Albert & Son, Trenton, N. J. Bers & Co., Philadelphia. P. Bloomfield & Co., Boston. C. Clifford, Baltimore, Md. W. C. Coleman Co., Rochelle Park, N. J. Wm. H. Cummings & Sons, New York. Goldberg & Rathman, Boston, Mass. Theodore Hoffer & Co., Buffalo, N. Y. A. W. Leslie & Co., Ltd., London, Eng. B. Loewenthal & Co., New York and Chicago. J. Loewenthal & Sons, Chicago. Philip McGrory, Trenton, N. J. Meyer Bros., Philadelphia, Pa. Trenton (N. J.) Rubber Reclaiming Works. M. Norton & Co., Charlestown, Mass. Henry P. Rindskopf, Brooklyn, N. Y. San Giacomo Sons, Newark, N. J. J. Schurmurmann, London. Schwab & Co., Philadelphia.</p>	<p>Scrap Rubber.—Continued. United States Waste Rubber Co., Brockton, Mass. M. J. Wolpert, Odessa, Russia.</p> <p>Substitute. Joseph Cantor, New York. Geo. F. Lufbery, Jr., Elizabeth, N. J. Massachusetts Chemical Co., Boston. Wm. H. Scheel, New York. Stamford (Conn.) Rubber Supply Co. Typke & King, London, England.</p> <p>Sulphur. Battelle & Renwick, New York. T. & S. C. White Co., New York.</p> <p>Sulphur Chloride. Acker Process Co., Niagara Falls, N. Y. William H. Scheel, New York. George W. Speaight, New York. Stamford (Conn.) Rubber Supply Co.</p> <p>Tire Fabrics. J. H. Lane & Co., New York.</p> <p>Tire Valves. A. Schrader's Son, Inc., New York.</p> <p>Valves for Air Goods. A. Schrader's Son, Inc., New York.</p> <p>Wooden Shells. Adolph Martin, Passaic, N. J.</p> <p>Zinc Sulphide. Joseph Cantor, New York. Typke & King, London, England.</p> <p>Zinc White. New Jersey Zinc Co., New York. Stamford (Conn.) Rubber Supply Co.</p>
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BUYERS' DIRECTORY

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Rubber Tires and Accessories.

<p>Auto Top Fabrics. Chase & Co., L. C., Boston, Mass. Hodgman Rubber Co., New York. Mutt & Co., L. J., Boston, Mass. National India Rubber Co., Bristol, R. I.</p> <p>Cases, Tire. Gilbert Mfg. Co., New Haven, Conn.</p> <p>Covers, Tire. Wiley & Son Co., Wm. H., Hartford, Conn.</p> <p>Fabrics. Chase & Co., L. C., Boston, Mass. Lane & Co., J. H., New York. Mutt & Co., L. J., Boston, Mass. National India Rubber Co., Bristol, R. I.</p> <p>Flanges and Rings. The A. Dewes Co., New York.</p> <p>Insulated Wires. Clark Insulation Co., Boston, Mass. National India Rubber Co., Bristol, R. I.</p> <p>Flats, Automobile. Boston Woven Hose & Rubber Co., Cambridge, Mass. Manhattan Rubber Mfg. Co., New York. National India Rubber Co., Bristol, R. I. Revere Rubber Co., Boston, Mass.</p> <p>Pumps, Tire. Pacific Tucking & Mfg. Co., Brooklyn, N. Y.</p> <p>Repair Stock. Trenton Rubber Mfg. Co., Trenton, N. J.</p> <p>Rims, Wheel. Hartford Rubber Works Co., Hartford, Conn. Goodrich Co., B. F., Akron, Ohio. Goodyear Tire & Rubber Co., Akron, Ohio.</p> <p>Tires. Bailey & Co., C. J., Boston, Mass. Canadian Rubber Co. of Montreal, Ltd. Continental Caoutchouc Co., New York.</p>	<p>Consolidated Rubber Tire Co., New York—Akron, Ohio. Diamond Rubber Co., Akron, Ohio. Dunlop Tire & Rubber Goods Co., Toronto. Electric Rubber Mfg. Co., Rutherford, N. J. Empire Rubber Mfg. Co., Trenton, N. J. Firestone Tire & Rubber Co., Akron, Ohio. Fisk Rubber Co., Chicopee Falls, Mass. F. W. Skinner, Advance Tire Co., Valley Falls, R. I. G. & J. Tire Co., Indianapolis, Ind. Goodrich Co., B. F., Akron, Ohio. Gutta Percha & Rubber Mfg. Co., Toronto. Harburg Tire Co., Harburg, Germany. Harburg-Vienna India Rubber Co., Harburg, Germany. Hartford Rubber Works Co., Hartford, Conn. Healy Leather Tire Co., New York. Indiana Rubber & Insulated Wire Co., Jonesboro, Ind. International A. & V. Tire Co., Milltown, N. J. Kasner, A. H., New York. Kokomo Rubber Co., Kokomo, Ind. Lake Shore Rubber Co., Erie, Pa. Michelin Products Selling Co., New York. Michelin Tire American Agency, Inc., New York. Mitchell Punctureless Pneumatic Tire Co., Swampscott, Mass. Morgan & Wright, Chicago, Ill. Motz Clincher Tire & Rubber Co., Akron, Ohio. North British Rubber Co., Ltd., Edinburgh, Scotland. Pirelli & Co., Milan Italy. Plymouth Rubber Co., Stoughton, Mass. Republic Rubber Co., Youngstown, Ohio. Sirdar Rubber Co., Ltd., London, England. St. John Rubber Tire Co., Inc., New York. Sweet Tire & Rubber Co., Batavia, N. Y. Swinehart Clincher Tire & Rubber Co., Akron, Ohio.</p>	<p>Trenton Rubber Mfg. Co., Trenton, N. J. United Berlin Frankfort India Rubber Co., Ltd., Berlin, Germany. Universal Tire Co., N. Y.</p> <p>AUTOMOBILE AND CARRIAGE. Boston Belting Co., Boston-New York. Eureka Rubber Mfg. Co., Trenton, N. J. Revere Rubber Co., Boston-New York.</p> <p>Tire Applying Machines. Nelson & Le Moon, Chicago, Ill.</p> <p>Tire Cases. Gilbert Mfg. Co., New Haven, Conn.</p> <p>Tire Covers. Wiley & Son Co., Wm. H., Hartford, Conn.</p> <p>Tire Fabrics. Lane & Co., J. H., New York.</p> <p>Tire Pumps. Pacific Tucking & Mfg. Co., Brooklyn, N. Y.</p> <p>Tire Repairing. Boston Vulcanizing Co., Boston, Mass. Foote Rubber Co., D. E., Cleveland, Ohio. Republic Rubber Tire & Shoe Co., New York. Voorhees Rubber Mfg. Co., Jersey City, N. J.</p> <p>Treads. Boston Woven Hose & Rubber Co., Cambridge, Mass. Leather Tire Goods Co., Newton Upper Falls, Mass. Manhattan Rubber Mfg. Co., New York. Revere Rubber Co., Boston, Mass.</p> <p>Valves, Tire. Schrader's Sons, Inc., A, New York.</p> <p>Vulcanizer, Tire. Auto Tire Vulcanizing Co., Lowell, Mass.</p> <p>Wires, Insulated. Clark Insulation Co., Boston, Mass. National India Rubber Co., Bristol, R. I.</p>
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